THE NORMAL COURSE IN DRAWING

TEACHERS' HAND-BOOK

Portland, Maine.

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TEACHERS' HANDBOOK

BY

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THE NORMAL COURSE IN DRAWING.

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Teachers' Hand-Book.

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PREFACE.

THIS Teachers' Handbook is designed to accompany The Normal Course in Drawing; and it is hoped that, from the directions herein given, not only will the lessons be explained, but also a stimulus be given towards a further study of the art.

Drawing is much more easily learned and taught, at least in its rudimentary forms, than is usually supposed. This manual presents the work in such a way that the teacher will see for himself that it can be mastered. The author aims to furnish teachers with knowledge which can be made available for instructing others, while the instructors themselves may become proficient in drawing, and be able thereby to teach more easily.

The plan of the handbook is a simple one. It aims, first, to furnish direct instruction as to the manner in which the different lessons should be taught; and, secondly, to give the average teacher suggestions which will lead to different and original methods. It is concise, clear, and to the point in its style; it lays down no set rules which cannot be deviated from by the teacher, but is calculated to excite interest in unfolding the lessons to the pupils, at the same time that it offers a wide field for the teacher's inventive power.

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THE NORMAL COURSE IN DRAWING.

GENERAL REMARKS.

HOW MUCH TIME TO DEVOTE TO DRAWING.

ONE hour and thirty minutes should be devoted each week to drawing. Divide the time into two, three, or four lesson periods. In the grammar grades two lessons, and in the primary grades three lessons, each week will give good results. More work can be accomplished in one long lesson than in two short ones, even if the time expended in distributing materials is not considered. A fifteen minutes' drawing lesson comes near being no lesson at all.

ABOUT PENCILS.

The pencils should be medium in grade (hard pencils can be used to advantage in the sixth, seventh, and eighth year classes when making mechanical or ruled drawings), and should be neither too sharp nor too blunt. A little common sense will decide this matter rightly.

Fig. 1.

When drawing, the pencil should be held very lightly, about two inches from the point: with the youngest pupils, less than that may be better; with the older ones, a little more.

ERASERS.

Erasers are to be used in drawing quite as freely as pencils. Do not create the impression that it is wrong to use an eraser. Teach its proper use, and do not hesitate to give it out with the other materials at every lesson. If a right impression of how to draw is made on the minds of the pupils, the eraser will be rightly used.

Generally speaking, erasers are needed only in finishing and completing a drawing. In the beginning of the work they are not needed, as all lines made on the paper are left until the form desired is secured. When this is done, the eraser may be brought into use to remove lines poorly drawn and to assist in putting on the finishing touches.

POSITION OF PUPILS WHEN DRAWING.

To create the habit in pupils of taking a graceful, natural, and correct position when drawing, simply guard against their placing both arms on

the desk, and their faces close to their work. Neither arm should ever touch the desk — the hand holding the pencil should be steadied by the little finger lightly touching the paper or desk.

The drawing should be done through the arm, not through the hand or wrist. It is free-arm drawing, rather than free-hand drawing. Drawing with the hand and arm resting on the desk, when the fingers guide the pencil, is only necessary when finish of a particular line is desired; but finish need not concern us at this stage of our work. We will put our attention and energies upon the form, leaving quality of line to take care of itself, knowing that finish will come naturally and at the right time, when our drawings are ready for it.

Create the habit of holding the pencil lightly, and drawing lightly, sitting as far from the work as possible, occasionally holding the work at arm's length to observe and correct it; then nothing will need be said about proper position.

TURNING BOOKS AND PAPER.

Let the pupils turn their books or paper on the desks when drawing as much as they choose.

TEACHING DEFINITIONS AND TERMS.

Do not spend too much time in teaching dry definitions and terms, particularly to the younger pupils. When necessary to use terms and definitions, see that they are the right ones, and correct the wrong use of both on the part of the children; but remember it is a drawing lesson, a lesson in observation, which is being given, rather than a language lesson.

PUPILS DRAWING ON THE BLACKBOARD.

It is a good practice to have pupils draw on the blackboard. All members of the class cannot do this at one time, but before the end of the year each pupil should have had some practice in this work.

DISTRIBUTING MATERIALS.

It is not easy to decide which is the best way of distributing drawing materials. The following is a good plan: —

1. Let the class form in position.

2. Have the books placed by one of the pupils on the front row of desks, while another pupil places the pencils and erasers on the rear row.

3. Then let the pupils in the front row take the books and pass to the rear, leaving a book on each desk as they go, and distributing the pencils and erasers on their way back.

Three minutes is ample time to give to the distributing and collecting

of all drawing materials. If more is taken, something is wrong; for it can be done in less time if the teacher has good control of her class.

HOME WORK.

Home work on the part of the pupils should not be obligatory, but should be very much encouraged.

HOW MUCH DRAWING IS THE TEACHER EXPECTED TO DO?

A teacher cannot successfully teach drawing without doing some work before his class, either on the blackboard, or on paper, or on both. The pupils should feel that you like to draw, and are learning this branch as well as themselves. Purposely show your work to your pupils. If some of their work is better than yours, what matters it? This drawing with the class, this coming to meet your pupils half-way, as it were, will be more helpful than anything else in securing good results. It will promote enthusiasm, and help to keep it alive; and enthusiasm is the best thing in the world to start with, and to end with also.

PREPARING LESSONS BEFOREHAND.

It is hardly necessary to say that a good teacher always prepares all lessons beforehand; but, if you are willing to do more than this in the matter of drawing, you will take up the book from which you are to teach for the year, and study each lesson, not omitting to draw as you will expect your pupils to do. Think, meanwhile, how each particular lesson can best be given to the class, and anticipate the mistakes which the pupils will be likely to make. This preparation for the work will be not only wise but helpful.

ON THE AMOUNT OF TIME TO DEVOTE TO EACH PAGE OF THE DRAWING BOOK.

Do not be concerned about the amount of time to be given to the subject matter on any page of the drawing book. Generally speaking, a good teacher will spend more time than a poor one on any given subject. Have well in mind what you desire to accomplish during the school year. Take all the time necessary to present well the subject in hand.

ON THE USE OF THE BLANK DRAWING BOOK AND BLANK PAPER.

Before drawing on any page of the drawing book, work should be done by the pupils on blank paper or in the blank drawing book, leading up to work in the drawing book. The work done in the latter should be less than half the full amount of the year's work.

Try not to use the word *practice* before the class. The children should be made to feel that every drawing they make, whether on blank paper or in the drawing book, is a final one.

ON DRAWING.

In free-hand drawing, accuracy or proportion should be considered first, then freedom and grace of execution. It is a question of seeing, of analyzing the object considered as to its form, and of making a representation of that form in the most suggestive way possible.

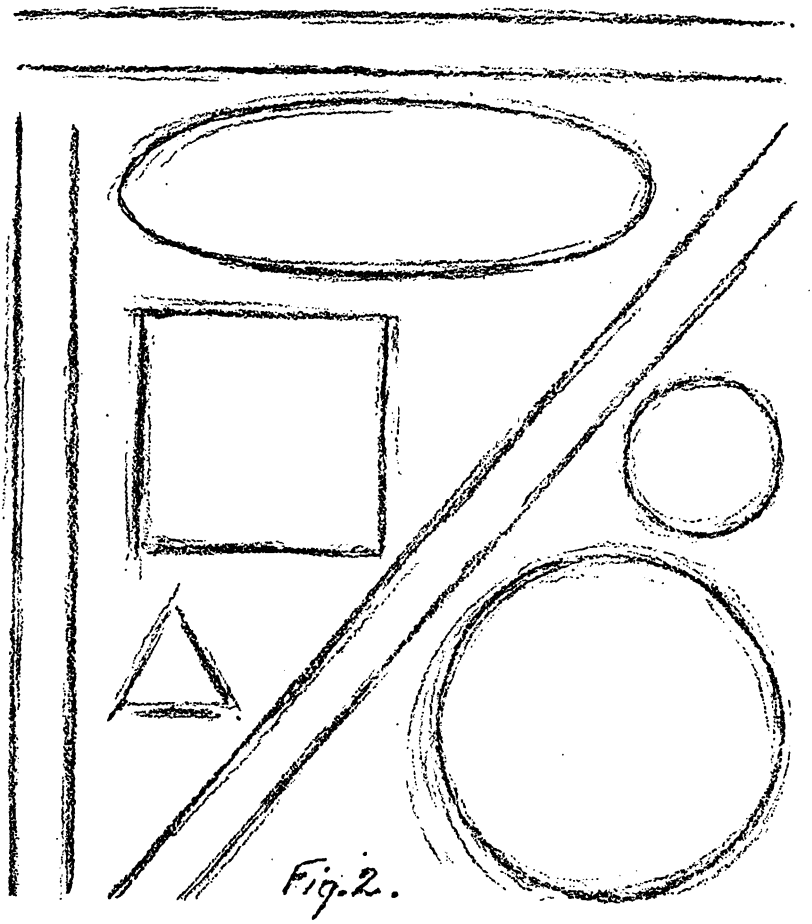


Fig. 2.

As to the kind of line to be secured, nothing need be said in the beginning, except that all lines should be very lightly drawn ; because, even as with the expert draftsman, the first lines are always trial lines. Pupils should sit as far as possible from their work, and, if practicable, should

hold the paper or drawing book so that the lower edge rests on the desk, while the surface to be drawn upon is at right angles to the direction in which it is seen. To hold the paper in this position, it must first be backed up by something stiff, like cardboard.

With a class of beginners, all lines should be drawn very lightly, quickly, and with a full-arm movement. The only occasion when one has to hold the pencil rather close down, and to draw with a finger or wrist movement alone, is when finishing some particular part, or adding some detail, instruction in which will come later.

Begin with the class in drawing by giving a few lessons in this free-arm movement. Draw horizontal, vertical, and oblique lines quite across the paper. (Fig. 2.)

Draw, moving the pencil to the right or left, up or down. No erasing in this exercise.

Now have the pupils draw a few plain geometric figures, such as the square, the oblong, and the triangle. The size of these drawings should be about four inches either way. No erasing should be allowed. Keep working on the one drawing until the desired result is obtained. If, for example, this result be a square, the form alone should concern us, not the number of lines we have put on paper to secure this form.

In the same manner, draw a few circles and ellipses, drawing with the pencil both toward the right and toward the left. (Fig. 2.)

Then put a few interesting drawings on the blackboard, being careful to draw as you wish the children to do, and have the young people copy your work. Forms, as suggested here, would answer. They are more interesting than meaningless lines and figures to a class of children.

Next give an exercise in the use of the eraser, — first drawing the figure, and securing a well proportioned form, before allowing the erasers to be used. A dozen lessons of this kind of work will be very profitable.

If the exercises suggested in the foregoing paragraphs are conscientiously worked out, the young people will be ready to draw in their books.

BLOCKING-IN LINES.

Blocking-in Lines is a term applied to the first light lines drawn, suggesting the mass of the "all-together" of the subject to be represented. These lines may be straight or curved. It would be better not to use this term before younger classes.

Remember that, generally speaking, all changes in the first draft, or sketch, or blocking-in, whichever it may be called, should be made by drawing new lines, not by erasing and then redrawing. The papers from

beginners may, because of this advice, present a black and sorry appearance; do not be discouraged, however. Throw the old papers away and start afresh. Soon the pupils will work more carefully and lightly.

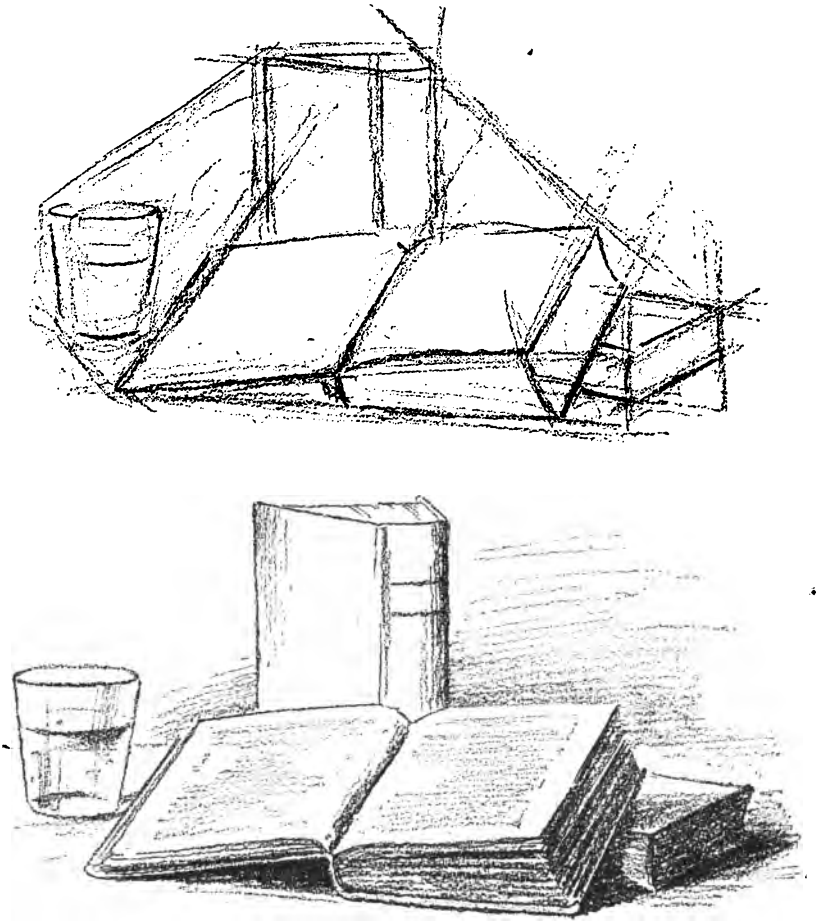


Fig. 8.

Try a hard pencil for these first exercises. Quite as artistic a drawing can be made with a hard as with a soft pencil.

Handle your crayon, when working at the blackboard, as you expect your pupils to handle their pencils. Set a good example, and the children will profit by it.

It will be well to cut a number of drawings from the different first-class illustrated magazines and papers, such as pen drawings, pencil and brush drawings, and paste these on strong sheets of manilla paper, measuring about nine by twelve inches, putting three or four on each sheet.

Pass these sheets of drawings to the children to look at, and even for older pupils to draw from.

DRAWING FROM NATURE.

Drawing from nature is perhaps the most interesting, and, if the lessons are conducted rightly, the most instructive work we can give young people, in order that they may learn to observe, to use their eyes, to think, and then to represent their thoughts pictorially.

Every opportunity afforded should be taken advantage of to give work of this sort. All blank pages in the drawing book may well be utilized, for careful drawings of leaves, birds, flowers, fruit, grasses, sprigs of branches, etc. This work can be done quite as well in winter as in summer. The fields and roadsides at any time of the year afford an abundant supply of material. A dried seed-stalk or grass-stem, picked from the snow-covered ground, can be made as interesting to draw from as a growing plant.

Use good judgment in the selection of objects for pupils to sketch. These cannot be too simple for the little people, while for children of a higher grade more complex forms may be used.

It is not always necessary that each child in the class be given a leaf or a bud or a sprig of the same sort at the same lesson. One child can have a leaf, another a seed-vessel, another a blade of grass, and so on. Each member of the class may have a different form to draw from; yet all the forms should present similar difficulties to the children.

For younger pupils, however, and frequently for those more advanced, it is well to have leaves, buds, sprays, etc., as nearly alike as possible; for instance, let every member of the class have a maple-leaf, or a horse-chestnut-leaf, or a stalk from the pussy willow, in order that the time of the teacher may be economized in instruction. In drawing a leaf from the same plant a large percentage of pupils in a class will make the same mistake, perhaps in proportion, or in some feature of the margin. Half a dozen will fail to observe some feature which is a prominent characteristic of the object under consideration; and a simple illustration on the blackboard, with a suggestion from the teacher, will at once set a number of pupils in the right direction.

Another advantage in having specimens as nearly alike as possible will be found in the opportunity at the outset to call attention, by judicious

questioning, to some of the more important points which might otherwise escape attention.

TESTING AND MEASURING.

Encourage the children to frequently test and measure their drawings, for accuracy's sake. This can best be done when they are drawing without the rules, by the aid of the pencil or a slip of paper.

ON THE USE OF THE RULER OR SCALE.

Whenever pupils are making mechanical drawings of any sort, the rule or scale should be used. In designing, whenever the need of it is felt, it should aid the pupil; and in the lower grades it can be used to advantage whenever a drawing is made by which a pattern from paper is to be cut.

A little common sense will rightly settle the question of the use and abuse of the ruler.

FOLDING.

Folding should always be done with the paper to be folded resting on the desk. If the intention is to fold the paper on a certain drawn line, first place on the line a straight edge of one of the pieces of paper cut from the pattern, and fold over this edge.

PAPER FOR MAKING PATTERNS.

The paper for making patterns should be stiff manilla. The results from making patterns from thin drawing paper are not very satisfactory.

MODELS.

Each school building should be supplied with a set of drawing models. This set should be kept in the office of the building. When a teacher has occasion to use certain models of this set he may send for them, but they should be returned to the office at the close of the lesson.

Fifty pairs of scissors should also find a place in each school building, to be kept in the office with other general drawing materials.

The work in drawing for the first year should largely be devoted to observation lessons. Children should be led to see what is about them in form and color. Children at two years of age will often distinguish between a buttercup and a daisy, by observing the difference in form and color. Certainly when old enough to begin school life they can not only distinguish but describe the difference between objects.

One of the first lessons to children should be to acquaint them with some of the faculties which they possess. Show them (what they already know, but have not thought about) that they have a certain number of

NOTE. — See Appendix in relation to the supply of all drawing materials for use in public and private schools.

"senses" by which they may learn to distinguish or tell one thing from another.

Show them that they are every day distinguishing or deciding between objects: —

First, by sight, in the general features; as a horse from a cow.

Second, by feeling; as an egg from an apple.

Third, by smell; as a rose from a pink.

Fourth, by taste; as a cherry from an olive.

Fifth, by hearing; as a piano from a hand-organ.

These faculties are all powers of the mind, and under the control of the will. We appeal to children through these faculties, and to make our appeal effectual we must keep the mind aroused by interest in the exercise of these powers.

As they are appealed to, response comes by some manner of expression. The usual means of expression is in spoken language. If all are requested to respond at one and the same time, confusion ensues, unless concert of expression prevails. In some cases this concerted response is well, but it cannot be long continued. For this reason written language is used. A word in the spelling-lesson may be given to forty pupils, and all give expression simultaneously to their knowledge of how to spell it without saying a word. This is done by writing. The characters which represent sounds are easily learned by children at an early age. The ability to execute these characters comes by practice.

This same thing is true, in a measure, in drawing as well as writing. Lines or marks, singly or in combination, are used to represent certain objects or forms; or, better, objects may be represented by lines so employed. The position, direction, length, and quality of these lines have much to do with good expression. Very many of the forms, either natural or artificial, which children attempt to draw, have some geometric form as a basis; that is, the general outline or *contour*, either of the whole or part, is seen to correspond to some simple geometric figure, as the outline of many leaves are elliptical or triangular, etc. This being true, it seems quite important that pupils should have some practice in simple outline drawing which will acquaint them with these geometric forms, as well as help them to acquire facility in the use of the pencil.

This much having been indicated as to the preliminary work in drawing, the plan of the primary books will be more readily understood.

DECORATIVE DRAWING.

DESIGN.

As a portion of each book is intended for practice in decorative drawing and original design, it is thought best to refer to some of the general principles which govern such work before giving in outline the distinctive features of the several books with specific instructions.

Three important principles of good decorative art may be considered, even by pupils in the lower grades, and if presented in connection with simple illustrations, will readily be comprehended by them. These principles are: —

Repetition,
Alternation,
Contrast.

If you will procure a few samples of wall paper or linoleum, it will be an easy matter to teach your pupils these principles, and at the same time to provide material which will furnish suggestions for blackboard illustrations, which should certainly accompany your instruction.

Show your pupils that a simple straight line, by being repeated at regular intervals, possesses an element of beauty. (Fig. 1.)

Draw this on the board.

Next show how, by adding horizontal lines, as in Figs. 2 and 3, or by changing the direction of the lines as in Fig. 4, another element of beauty is added; viz., that of contrast. Various modifications of the use of the simple straight line may be employed in illustration of these principles. Figs. 5 and 6 will suggest some of these.

Ask the children if they have ever seen any examples similar to these, and where they have seen them. Also ask them to look for some on their way to or from school. Show them some good examples of historic ornament from photographs, and they will begin to notice some of the things which before have been passed unobserved.

Draw a square or part of a square on the blackboard, and divide it as shown in Fig. 7, shading every other small square, and ask them if they have ever seen any public building in which the floor is laid in square tiles, perhaps of two colors. Then draw another square of the same size, and divide it as shown in Fig. 8. Both of these figures are arrangements of simple squares repeated, but even young children will tell you that they think Fig. 8 looks better than Fig. 7. See if they can tell why. Before

waiting for an answer, illustrate the principle a little further by drawing on the board Figs. 9 and 10. They may then possibly be able to tell you why they think Fig. 8 is preferable to Fig. 7, or why Fig. 10 pleases them

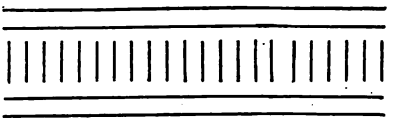


FIG. 1.

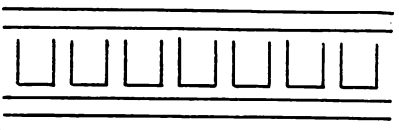


FIG. 2.

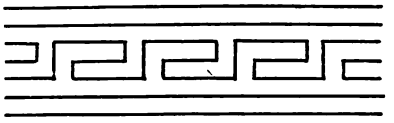


FIG. 3.

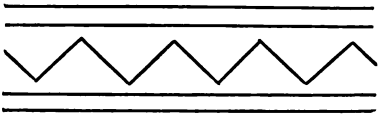


FIG 4.

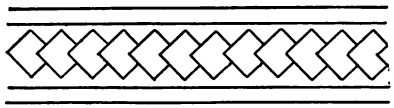


FIG. 5.

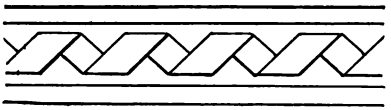


FIG. 6.

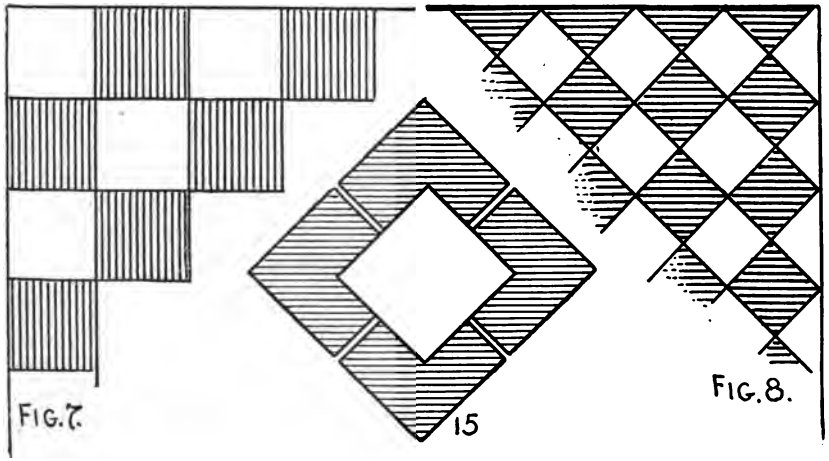


FIG. 7.

FIG. 8.

15

better than Fig. 9. In each case the same simple square is used. Very likely they will tell you they prefer one to the other without being able to tell what it is that makes the difference. Show them that it is *contrast;* in this case, contrast in direction. In Fig. 9 the horizontal sides of the

square are parallel to the border lines, and the vertical sides of the square are parallel to the sides of the adjacent square; while in Fig. 10 the sides of the square make angles with the border line, as well as with the sides of the adjacent square. This contrast in the direction of the lines gives more pleasing results than in the first case, where the lines are parallel.

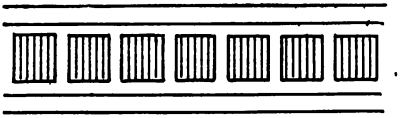


FIG. 9.

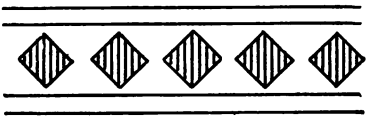


FIG. 10.

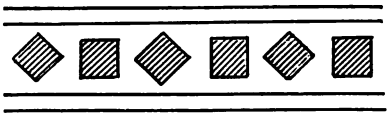


FIG. 11

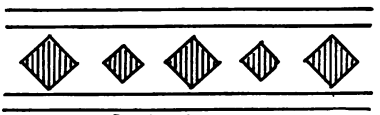


FIG. 12.

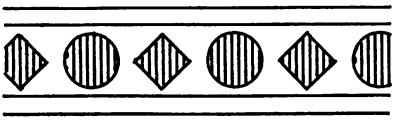


FIG. 13

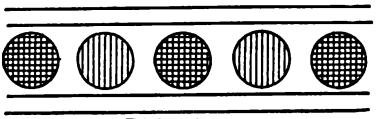
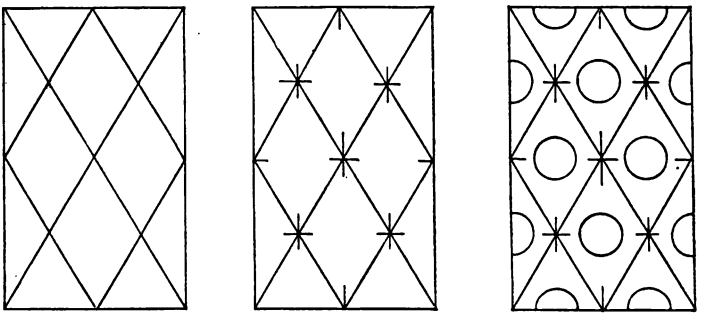


FIG 14



The principle of repetition may be shown in various arrangements, as for borders, surface covering, and symmetrical arrangement around a centre, by selecting some good but simple examples of historic ornament. (See pp. 38, 39, and 40.)

The foregoing will require several lessons, if the pupils are allowed to

make simple drawings to illustrate the principle taught. This ought to be done, in all classes, whenever the subject is under consideration. Opportunity to refer to it by way of review will be of frequent recurrence, as in all the books some illustrations of historic ornament are to be found.

If some of the pages of the blank drawing book be devoted to the repetition of simple unit forms, it will help to keep up the interest and inspire pupils to renewed activity in searching for illustrations of the principle in out-of school hours. Ask them to observe and bring sketches showing the results of their observation. Some of the best ones may be put on the blackboard by the teacher or by the pupils.

At another lesson continue the subject, hastily reviewing the previous work, and adding another principle, as *Alternation.*

Fig. 11 gives the repetition of the square as before; but the squares are not arranged in uniform position, or in the same relation to each other, as in the previous lessons.

Some are placed so that the sides of the square are parallel to the border lines, while the others are placed so that they make an angle with them. This gives *alternation of position.*

In Fig. 12 the square is repeated as before at regular intervals, but there is not uniformity in size. A large square is made to alternate with a smaller one. *This gives alternation in size.*

In Fig. 13 the square is again repeated at regular intervals; but in this case it alternates with a circle, giving *alternation in form.*

Draw all these on the blackboard, and ask the children to tell you which of the three borders pleases them best. Probably they will tell you that they prefer Fig. 13, and some, without doubt, will tell you why.

This may lead on to another lesson, in which you may be able to tell them some things which, if remembered, will aid them in choice of many things in household decoration, without danger of offending good taste in the selection.

Owen Jones, in his *Grammar of Ornament*, says, —

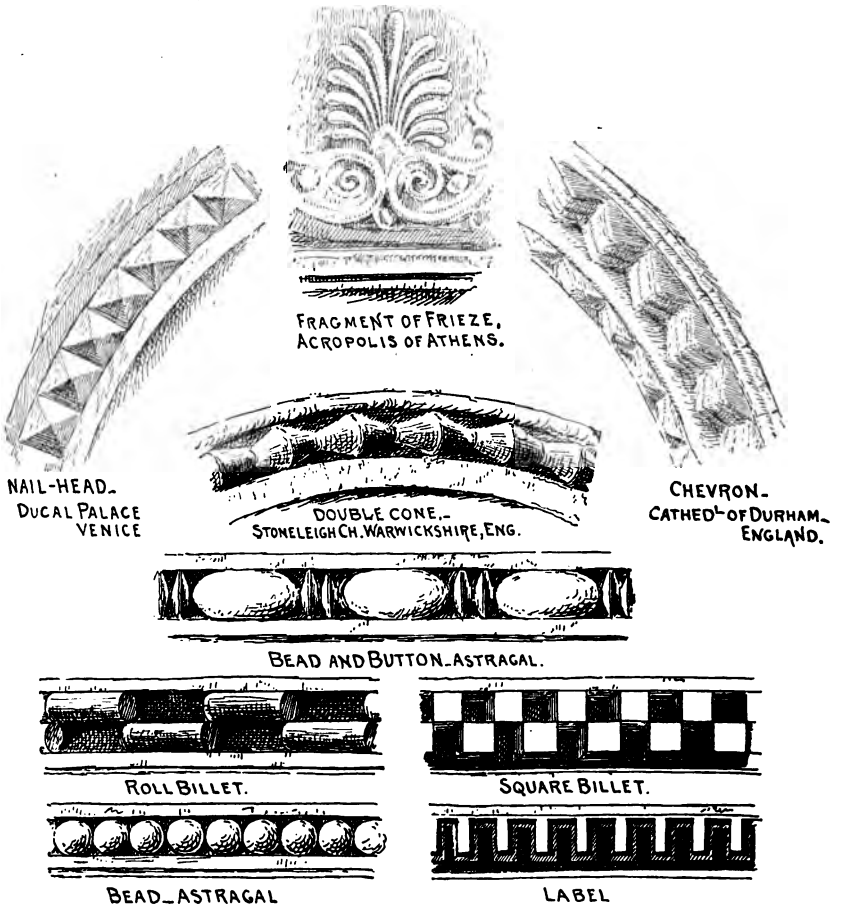
"In surface decoration, any arrangement of forms as at A, consisting only of straight lines, is monotonous, and affords but imperfect pleasure; but introduce lines which tend to carry the eye towards the angles, as in B, and you have at once increased the pleasure. Then add lines giving a circular tendency, as in C, and you now have complete harmony.

"Harmony of form appears to consist in the proper balancing and contrast of the straight, the inclined, and the curved."

Motives for design come from two sources, viz., The Book of History and the Book of Nature. It has been said that, "In the study of Nature, without which the architect as well as every other artist can do

nothing, absolutely nothing, he must also study the commentaries on her; i.e., all previous productions of his art."

Nature furnishes abundant material on every hand. Ancient art will show how this material has been adapted to purposes of decoration in times



past. If pupils can be led to a study of both simultaneously, in preference to studying either alone, great advantage will be found in so doing.

The object or article to be decorated must first be considered, and then the law of adaptation must be applied in carrying out the details. The beauty of any decorated object depends largely upon the proper adap-

tation of every feature to the purpose for which it is designed. Symmetry, unity, proportion, continuity, — all these should be made to give harmony to the whole.

Nature never fails to furnish perfect examples, therefore study nature. On the other hand, follow the advice of one who has well said: —

"Never lose an opportunity of seeing anything beautiful. Beauty is God's handwriting, — a wayside sacrament. Welcome it in every fair face, every fair sky, and every fair flower; and thank him for it."

The plate of illustrations of various mouldings will have some interest, as showing how many of the type forms are used, and have been used for centuries in different styles of architecture.

If the teacher or some pupil who can draw readily will enlarge the drawings of this page on the blackboard; or, better still, will procure a large sheet of paper and make a good chart to be kept for reference, or to hang in the schoolroom, it will serve to quicken interest in the drawing lessons. Many of the illustrations to be found in this manual so treated will also be helpful. The time so employed will be found sufficiently compensated by the enthusiasm aroused in this subject, which will make all the lessons a delightful task.

AN OUTLINE OF INSTRUCTION.

BOOK No. 1.

SUGGESTIONS FOR FIRST LESSONS.

Page 1. — Give out no drawing materials. Come before the class with a cube large enough to be clearly seen by all, when shown from the front of the room. It would be well to have other models from the drawing set, such as prisms, cylinders, and spheres, to aid in illustrating the lesson.

Now, as suggested in note at bottom of page 1, study the cube.

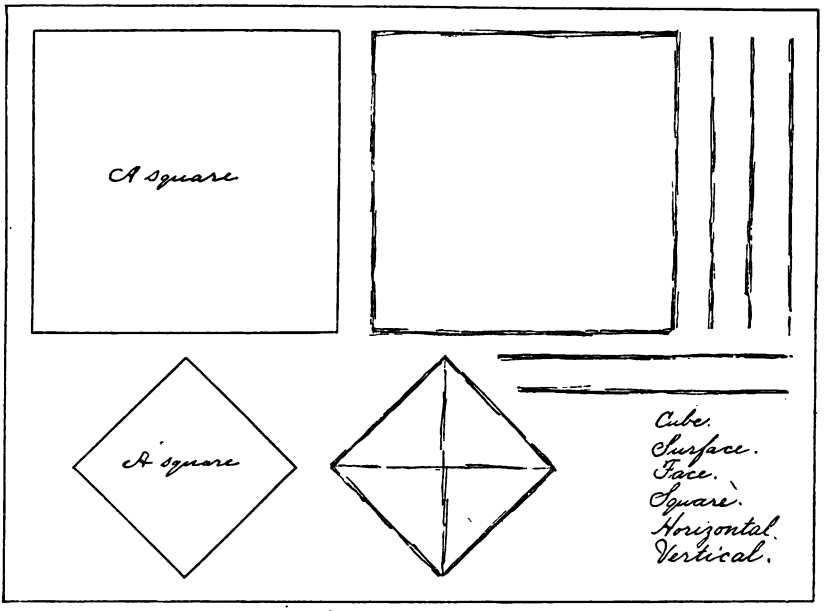
This lesson can be made very interesting. By skilful questioning, and by the many different ways of illustrating remarks that will suggest themselves to the interested teacher, a strong picture of the cube can be formed in the minds of the pupils.

Draw a picture of a cube on the blackboard. Draw a picture of one of its faces, viz., a square. Draw horizontal and vertical lines. Have pupils draw on the blackboard. Note what is said about teaching definitions under *General Remarks*. Encourage the children to bring to the

class-room, before the next lesson, small objects whose general form is cubical. There are not many objects whose forms are based on the cube, but the children will bring a few; of course you will also bring some.

SUGGESTIONS FOR SECOND LESSON.

A few moments spent in showing and talking about the objects which the children have brought to the schoolroom since the last lesson will be the right way to begin this second lesson. If you sketch on the blackboard the forms of a few of the simplest of these objects, the talk will be more instructive, as well as more interesting.



Now give out to the class blank paper, blank drawing books, scissors, and pencils. Have the pupils cut from the blank paper a three or four inch square; then another, a smaller one, perhaps measuring two inches on a side. Have them write "A Square" on each, and paste neatly in the drawing book, on the left of the first page. Then have the class draw the forms of these paper squares on the same page at the right. Have them draw horizontal and vertical lines, and finally let them write the words Cube, Surface, Face, Square, Edge, Corner, in some remaining space on the page.

See illustration representing this finished page.

Undoubtedly the thought will come to some teacher that too much is outlined here for one lesson, considering the time devoted to drawing. Very good; make it the subject matter for two lessons, or even three. It is certainly wiser to omit, if necessary, some of the subject matter in the year's work in drawing, than to give any lesson hurriedly.

SUGGESTIONS FOR THIRD LESSON.

Give out the drawing books, scissors, pencils, and blank paper.

If colored paper can be used in place of blank paper to cut from, when it is intended to preserve the cuttings in the drawing book, it will be an advantage in every way. Young people can be taught the names of the different colors, if nothing more.

Have all the members of the class use the same color of paper at any given lesson. It would be well to take up the spectrum colors first, and in their natural order.

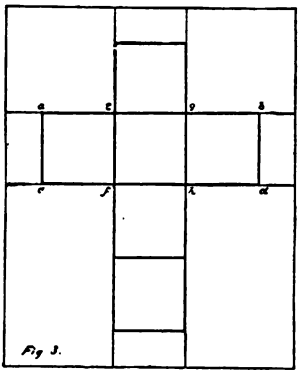


Fig. 3.

Have the pupils cut from either the blank or colored paper, a square of the same size as that printed in the book on page 1, and paste it neatly over the printed square. The next lesson may be devoted to drawing the square at the right of the square of paper, as is suggested in the drawing book.

Page 2. — If the subject matter has been presented to the children in the manner suggested, page 2 will offer no difficulties. Complete this page as suggested by the foot-notes. It may be well to have the pupils cut six equal squares from paper, and paste them in the blank drawing book on page 3, in the order here given. Some teacher may think that the cutting of the six squares is too difficult a task for second-year children. Perhaps so; yet the success in accomplishing such a task depends more on the manner in which the work is presented to them than on anything else.

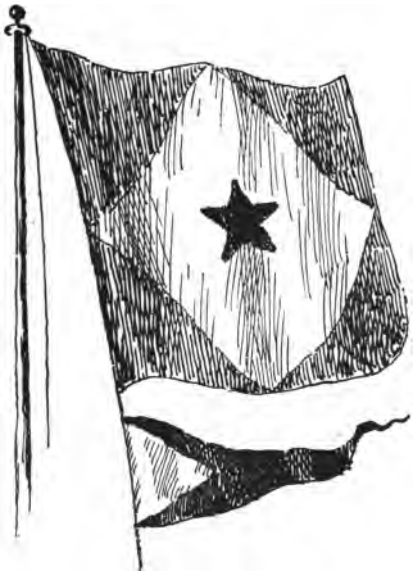
Page 3. — Before drawing on this page, a large pattern of a cube should be shown the children. They should then make a pattern, which will be successful, if the work is presented rightly.

The following order of work will perhaps present itself as one way of accomplishing the desired result. For the work below described provide each pupil with a piece of paper about five by seven inches in size.

1. Draw the line *a* — *b*, quite across the paper. (See Fig. 3.)

2. Draw the line c — d, also quite across the paper, first placing the points through which to draw it, so that when drawn it will be parallel with the line a — b.
3. Place point c, and draw the line a — c.
4. Place point e.
5. Place point f.
6. Draw the line e — f, quite across the paper.
7. Place point g.
8. Place point h.
9. Draw the line g — h, quite across the paper. Continue this plan of procedure to the end, and the result *will* prove satisfactory.

Read under *General Remarks* what is said about drawing with the ruler, and testing the accuracy of work.



When this pattern is cut and folded, it may be pasted upon page 5 of the blank drawing book.

To teach parallel lines as suggested on page 3, draw a few, both straight and curved, on the remaining space on page 5 of the blank drawing book.

Now complete page 3 of the drawing book, without the use of the ruler, although testing the work with paper or pencil is advisable.

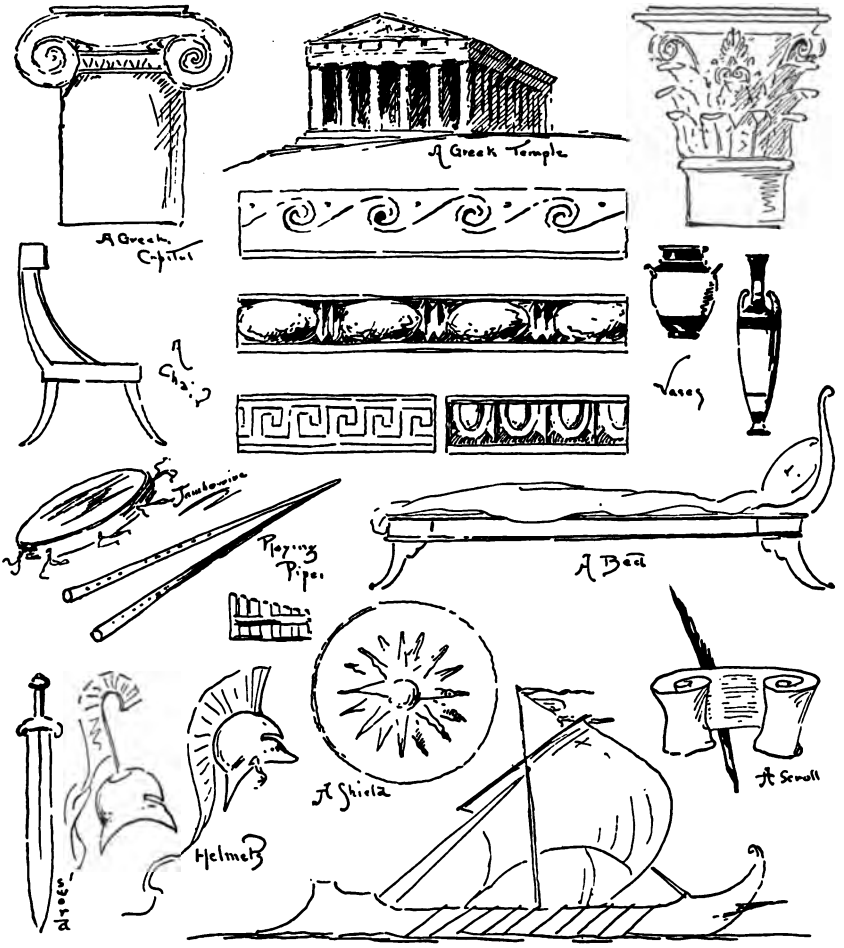
Page 4. — If the suggestions for presenting the subject matter on pages 1, 2, and 3, have been carefully read, the task as presented on page 4 will appear very easy, and no further explanation of it than is there given need be made.

Page 5. — The only suggestion necessary for page 5 is this: In place of drawing the signal flag, as found printed on this page, it might prove more interesting to the young people to draw another, perhaps one that is flying in the breeze. Make the drawing on the blackboard, and have the children copy it. This drawing need not be a weather-signal flag. The weather-signal flags might well be drawn in the blank drawing book.

Page 6. — If it is thought that a review, as suggested in the notes,

is unnecessary, this page may be used for another exercise. Another application of the square is suggested, the children drawing from the models on the blackboard.

Page 7. — Six very interesting lessons can be given on the subject



matter of page 7. A talk about ancient Greece, its people, their customs and manners, with illustrations drawn on the blackboard, may well take up five lessons. The children should try and copy these drawings in their blank drawing books. To do so, will give them excellent practice in quick

sketching. Do not be discouraged if their drawings are not what would be called good from an adult point of view. We must never forget the child, in criticising children's work. See chapter on *Decorative Drawing*.

After these preliminary lessons, the drawing book may be opened to page 7, and the work to be done there will be accomplished not only easily, but with much enthusiasm.

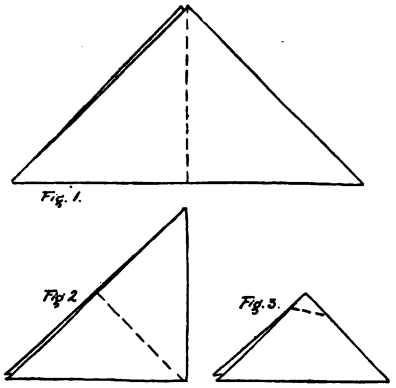
Page 8. — The work on this page may be given as the subject matter on page 4 was given.

Page 9. — The printed matter found on this page will suggest at least half a dozen very interesting lessons.

First, teach what a triangle is. Cut variously shaped triangles from paper, and preserve them in the blank drawing book. Then make drawings of these paper triangles. Next give information on what an angle is, and picture a few there also.

Now open the drawing book to page 9; teach what a right-angle triangle is, and draw it as there suggested.

Page 10. — Have the pupils cut the envelope as represented on this page. To do this, proceed as follows: First cut a square of paper measuring four inches on a side. Fold it on one of its diagonals, and the paper will be pictured by Fig. 1. (See illustration.)



Fold again on a line represented by the dots on Fig. 1, and it will give what Fig. 2 represents. Once more fold on a line represented by the dots on Fig. 2, and the result will be pictured by Fig. 3. Now cut the folded paper on a line as represented by the dots on this last figure. Unfold, and fold for envelope.

The envelope made may be pasted either in the drawing book over the printed one, or in the blank book.

On the right half of page 10, draw as is suggested by the notes on the page.

Page 11. — Like pages 7 and 9, page 11 suggests a few entertaining and profitable lessons that may be given before drawing on this page.

Tell the story of the different crosses, drawing pictures of them on the blackboard, and let the children draw them in their blank books.

Make these crosses from paper, and preserve them on one of the pages of the blank book. Here is certainly entertaining work enough for four lessons.

Now open the drawing book at page 11, and draw the crosses as suggested in the printed matter on the page, or, in the space at the right of the picture, one of the other crosses.

Page 12. — Drawing from nature suggests itself as the best way to fill page 12. However, before drawing on this page, practice work should be done in the blank book, or on blank paper.

Re-read what is said on drawing from nature under *General Remarks.*

Page 13. — Four interesting lessons can surely be given from the subject matter on page 13.

First, the three kinds of triangles should be drawn, cut, and pasted on the blank drawing book; then on the same page of the book they should be pictured with the pencil. It will not be advisable to call these three triangles by their scientific names, equilateral, isosceles, scalene. It will be better for little children to know these figures as equal-sided triangles, triangles with two sides equal, and triangles with no two sides equal.

Have the pupils write the terms base, altitude, vertex.

When drawing on page 13 of the drawing book, it may be advisable to picture the three triangles on this page rather than one.

Page 14. — Instead of drawing from the copies, as is suggested on this page, it will be more interesting, and perhaps more instructive, if the pupils draw from a knife. See to it that the knife to be drawn is simple in form, and that all the pupils work together, step by step, in the order which you name.

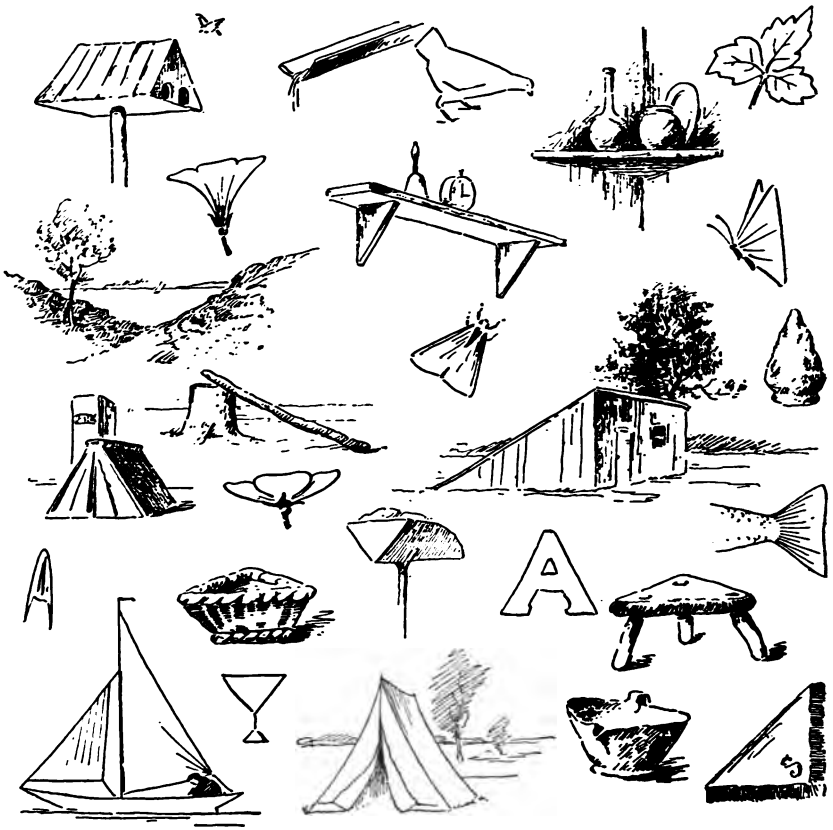
Page 15. — Instead of drawing the flag at the right as it is pictured, it may be as instructive to draw it as if flying in the breeze. Two colors may be represented instead of one, or some device or emblem may be pictured on it.

Now, in the blank drawing book, have the pupils picture other forms shaped like a triangle, from drawings made by you on the blackboard.

At the close of this lesson, ask the little folks to bring to you some

original drawing before the next lesson, representing things they have seen out of school, the forms of which are triangular.

These drawings should be criticised before the class at the next lesson, the best of them being drawn on the blackboard by the pupils who have made them, the remainder of the class perhaps copying them in their blank books.

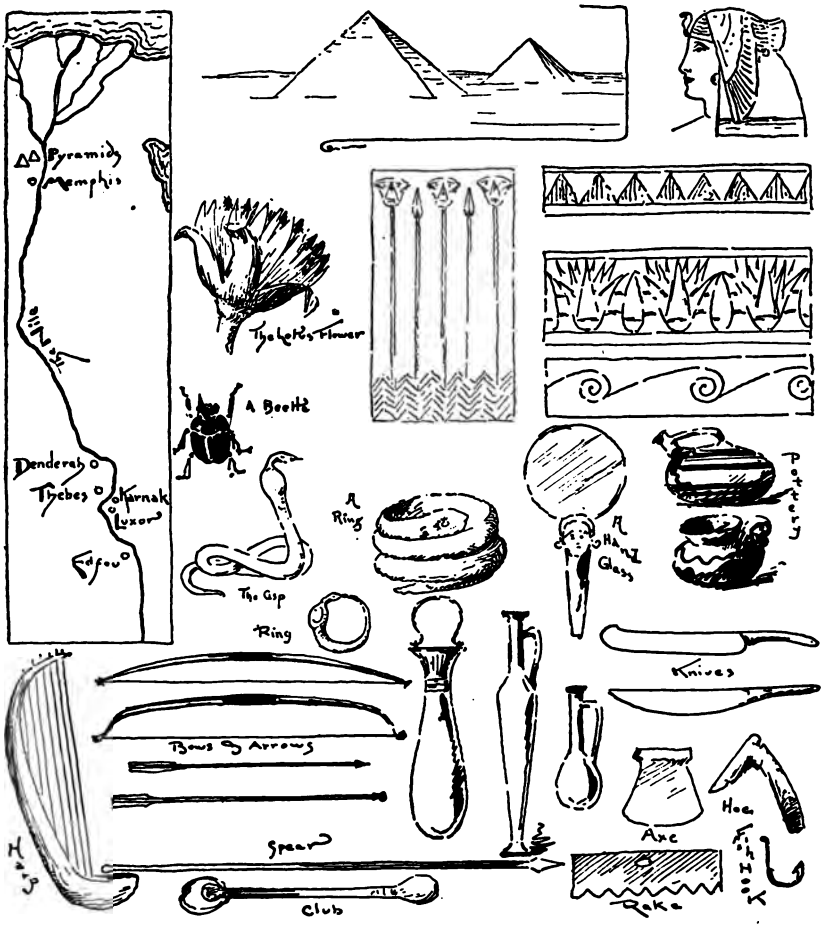


Now show the drawings you have made of things shaped like a triangle. Here are a few illustrations that perhaps will be helpful.

Page 16. — Re-read the instructions for page 7. Give the subject matter on page 16 in the same way. It will be a story of Egypt in this case.

Page 17. — The directions given for page 14 will apply here.

Page 18. — It may be more interesting and quite as instructive to draw another design for a border on the blank part of this page, rather than to make a copy of the printed one. Of course the design of this new border should be an application of the rhombus.



Page 19. — The notes found on this page furnish sufficient instruction concerning the subject matter.

Page 20. — Give instruction on this page as on page 4.

Page 21. — Rather than to make a copy of the window printed on

this page, draw one from the object itself, not forgetting that work in the blank drawing book should always precede work in the regular drawing book.

Page 22. — Teach as notes suggest, or as the lesson was given on page 12.

Page 23. — Continue here with drawing from nature.

Page 24. — To be completed as begun in the first three squares.

BOOK No. 2.

Page 1. — Before teaching from Book No. 2, read carefully *General Remarks* in the *Manual*, and probably a few lessons will be suggested which may be given with profit before the subject matter in Book 2 is considered. Note also what is said concerning preparing lessons beforehand.

The first page of Book 2 has to do with the study of the square prism. It will be wise, before allowing the children to do any drawing on this page, to devote a few lessons to the subject, bringing into use the blackboard, blank paper, blank drawing book, and scissors.

First, place before the class models of the cube, sphere, two or three prisms, a cylinder, a pyramid, and a cone.

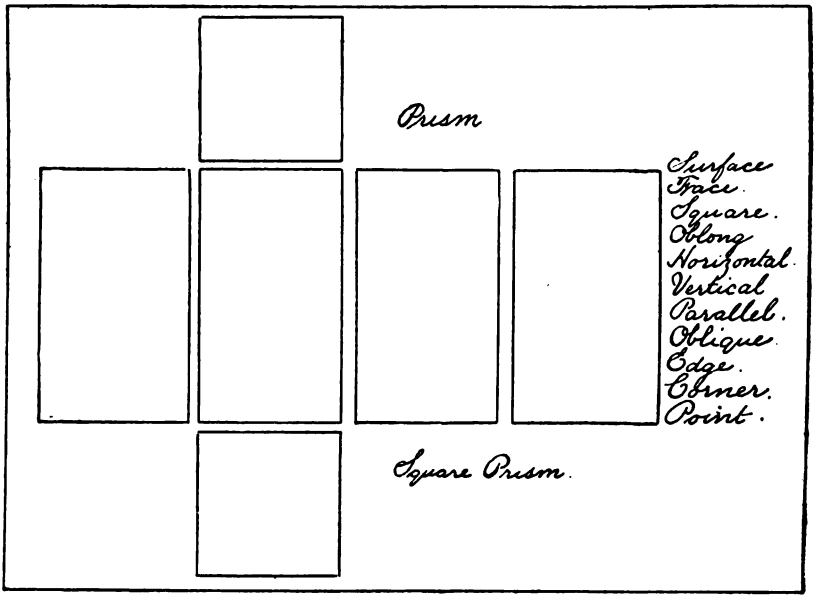
Develop the idea of *surface* as the outside of an object. Then the kinds of surface, as *curved* and *plane*. Have one of the pupils write on the board the word *surface*, another the words *curved surface*, and another the words *plane surface*.

Now take up the subject of faces, and as soon as discovered, the terms *curved face* and *plane face* may be written on the board. The shapes of faces, as circular, square, triangular, etc., should be considered, and the edges, curved and straight, should not be forgotten. The idea of direction, as vertical, horizontal, and oblique, may be reviewed and illustrated, and the *corners* and *points* may also be considered.

When the models before the class have been talked about in this general way, take up the square prism for particular study.

Cut two squares and four oblongs from paper, to represent the ends and sides of a square prism, and mount them on a page of the blank drawing book as illustrated on p. 31.

Now show the class a pattern of a square prism made from stiff paper. Have the children cut and fold a similar pattern. Pasting the edges is not necessary; although, if time and proper facilities are at hand, this part of the exercise will be profitable. However, with the little people, the exercise of drawing, cutting, folding, and holding, if only for a few moments, the folded pattern in the hand, will be enough.


Prism
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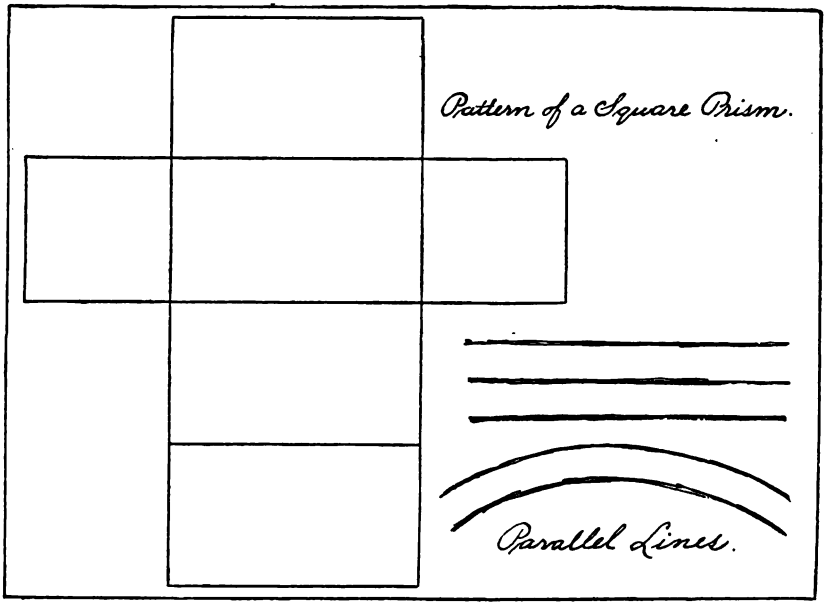
Square.
Oblong
Horizontal.
Vertical
Parallel.
Oblique.
Edge.
Corner.
Point.
Square Prism.


Pattern of a Square Prism.
Parallel Lines.

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Page 2
page 12.

Page 2

Page 2

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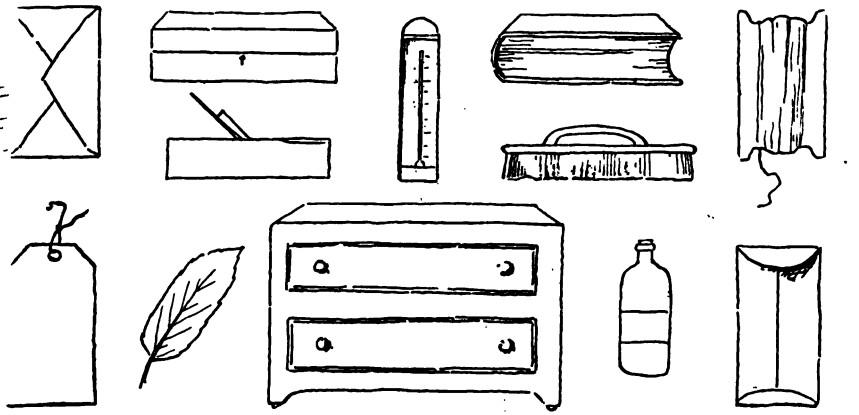
ıwing of an envelope, as suggested in the notes on this page. If :ferred, one drawing may occupy the full space, to be selected from the drawings brought in by the children.

Page 3. — Have the children make enlarged copies of the drawings the head of this page, as suggested in the printed notes. Nothing ɔuld be said about perspective, although it is employed here to picture ɜse forms. If the lessons that were suggested under *General Remarks* ve been taught, it will be easy to understand how to teach the work be done here. Fig. 1 is a picture of the square prism; Figs. 2 and 3, ctures of boxes whose forms are based on the square prism. Let the ıpils first draw on the blackboard the work suggested for this page.



Page 4. — It would be well to draw the pattern of the envelope like he one printed on page 4 on blank paper; then cut it out, fold, and mount t in the blank drawing book.

If this is done, draw the pattern of some other envelope in the drawng book.

Page 5. — Cut a rhombus or two from paper, and mount in the blank drawing book.

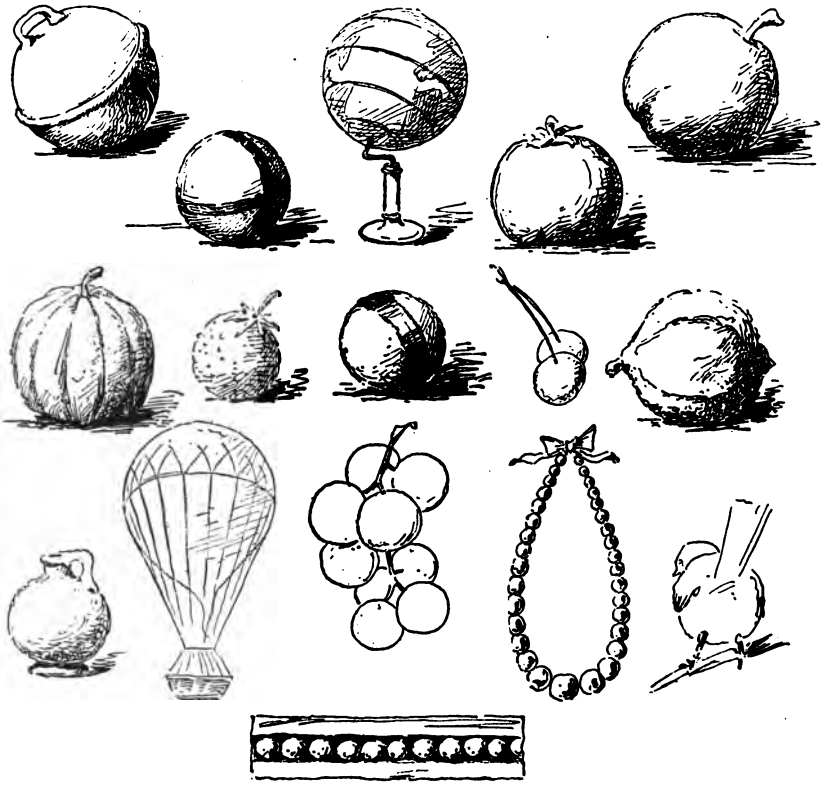
If it is not convenient for all members of the class to draw the schoolroom door, any other object whose form is based on the oblong will do as well.

Review *diameters* and *diagonals*.

Page 6. — Read the suggestions for giving page 3, and give the work outlined here in the same spirit.

Page 7. — Before drawing on this page, a number of very interesting and profitable lessons may be given on the sphere and circle.

We cannot very well make a pattern of the sphere and preserve it in our blank drawing book, as we made a pattern of the square prism when studying from page 1, but we can find many objects whose forms



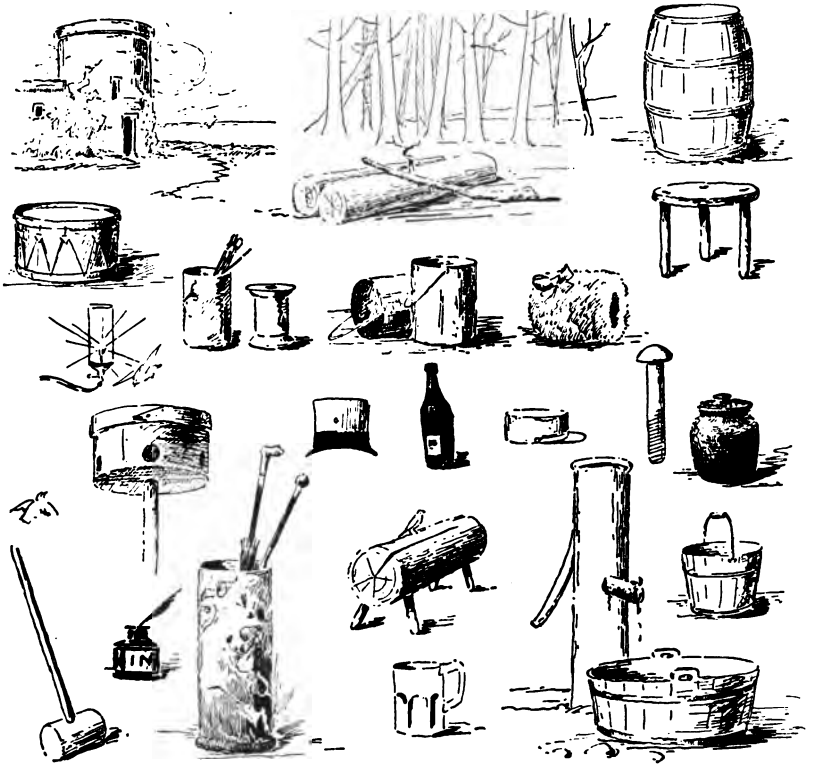
suggest the sphere, and we can make pictures of them in our blank books and on the blackboard. Read again here what is said about shading under *General Remarks.*

Have the children write the word "sphere" and "spherical" in the blank books as well as on the board, also the words "circle" and "circular;" and, of course, objects circular as well as spherical in form should be drawn.

After this work is done, follow the directions on page 7.

Page 8. — Teach half-circle or semi-circle. Complete the page according to directions at the bottom.

Page 9. — The cylinder. A most interesting object for the children to study. Ask them questions concerning it: "What about the surface of this object?" "How many faces has it?" "What kind of edges?" "How many objects can we find in the room similar to it?" "How many

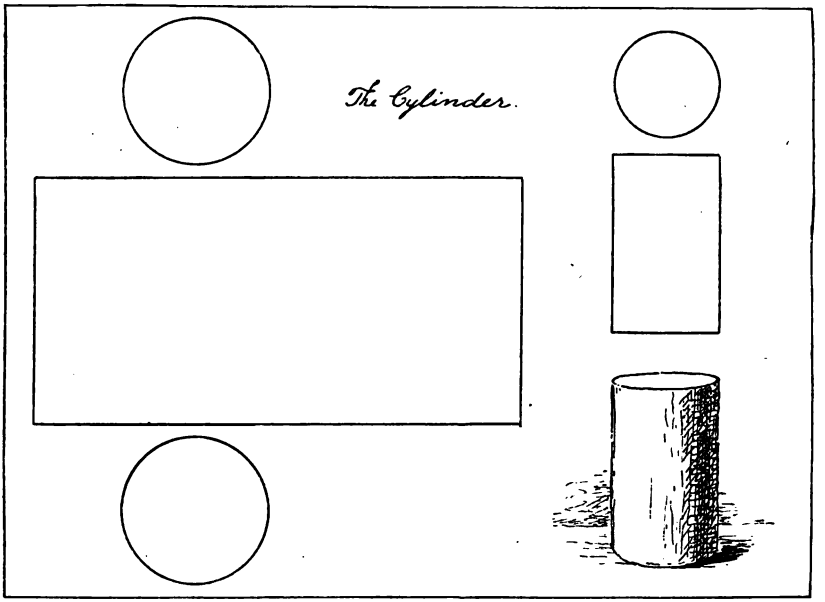


objects that resemble this form can we remember to have seen?" "What is the name of this object?" "Write the word on the blackboard."

Ask the pupils to bring to school, before the next lesson, objects whose forms are cylindrical; a large and varied collection will probably be the result.

Now, by the aid of pencil and scissors, cut two circles two inches in diameter, to represent the ends of the cylinder, and an oblong of paper to represent its curved surface. Let the sides of this oblong which is to

represent the length of the cylinder be four inches long, and the sides which represent the curved edge of each end be three and one-third times the diameter of the circles. This dimension may be easily found in the following way: Cut a slip of paper just the length of the diameter of the circles. Mark off the length of this slip three times, then fold the paper in three equal parts, and to the length already marked off add the length of one-third of this paper. When this oblong is drawn, cut it from the paper, and mount it with the circles in the blank drawing book as here represented.



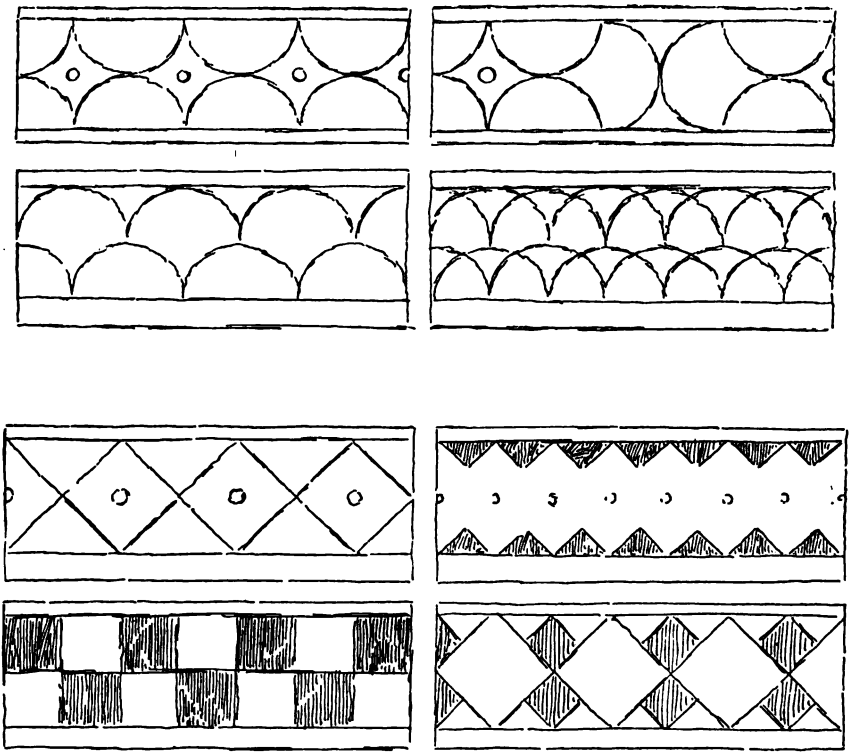
Have the children make pictures of a cylinder, as illustrated by the above figure, on the same page of the blank drawing book, and after that as many pictures of objects whose forms are cylindrical as seems advisable, choosing these objects from the collection brought by the pupils. These pictures may be drawn directly from the object, as well as from your drawings on the blackboard.

Re-read what is said about shading under *General Remarks*. Now turn to page 9 in the drawing books, and do as directed; or, in place of drawing a common tumbler, have the pupils picture some other cylindrical object.

Pages 10, 11. — The subject-matter on these pages may be presented to the class in the same way as that on page 9 was presented. The form to be studied is the hemisphere.

Page 12. — This page is to be devoted to the practice of drawing long curved lines.

Page 13. — Rather than copy the design printed in the book, which



represents a simple application of the half circle as applied to decoration, it would be well to awaken more interest in the work on the part of the pupils by drawing another border design in the blank space on this page. Of course, like the printed one, it must be an application of the half-circle. Here are a few suggestions.

Page 14. — Follow the general instructions given for page 7.

Page 15. — Let the drawings on this page be from nature. Before

drawing on the page, pupils should do considerable work in the blank book. Re-read carefully what is said about drawing from nature under *General Remarks*.

Pages 16, 17. — A continuation of drawing from nature.

Page 18. — An application of the square to decoration. The instructions for page 13 will apply to the work on page 18. See chapter on *Decorative Drawing*.

Pages 19, 20. — More drawing from nature. Read what is said under *General Remarks* about blocking-in lines.

Page 21. — If the work suggested to be done on this page appears too simple for the pupils, the blank space on the page may well be devoted to drawing from nature.

Page 22. — The work to be done on this page should be given like similar work on pages 13 and 18. See chapter on *Decorative Drawing*.

Page 23. — This page is devoted to drawing from nature.

Page 24. — Here is a continuation of the study of design. Read chapter on *Decorative Drawing*.

BOOK No. 3.

THE work to be done here is really nothing more than a review of the subject matter presented in Books 1 and 2. True, the exercises suggested on the different pages of this book are rather more difficult than the preceding ones, yet the subject in hand, the principles involved, are the same. A thorough acquaintance with the subject matter of the first two books, and of the manner in which it was presented, will be necessary before Book 3 can be taught successfully.

Before drawing in Book 3, give what exercises are suggested from reading the *General Remarks*, by way of introductory work.

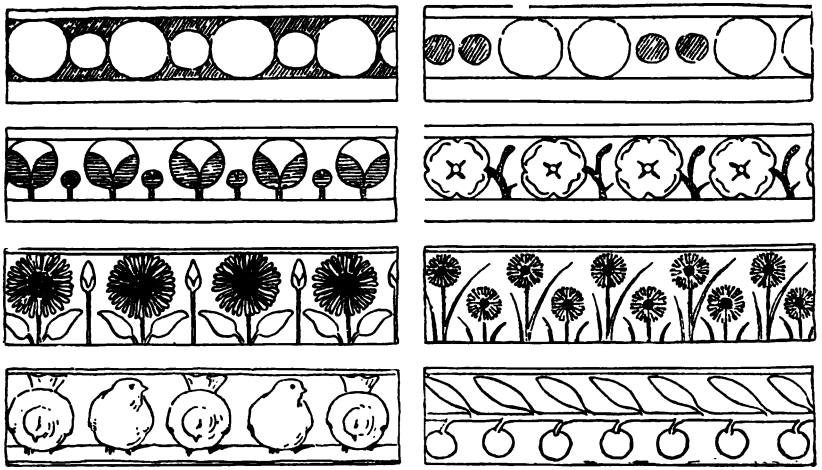
Pages 1, 2, 4, 5, 6, 7. — These pages are a continuation of the subject matter given on page 7 of Book 2. Re-read the instructions given in the *Manual* for that page, also the instructions given for page 1, Book 1, and pages 1 and 9, Book 2.

Read again carefully what is said under *General Remarks* about drawing, drawing from nature, blocking-in lines, shading, and models, and the placing of them about the class-room.

Page 3. — A lesson in decoration. This sentence suggests a number of very interesting lessons that may profitably be given on the

general subject of ornamentation, before the work on page 3 is taken up. Read carefully the instructions in this *Manual* for pages 7 and 16, Book 1. The subject matter found on those pages may well be repeated now

When drawing on page 3 of Book 3, it would be more interesting, and quite as profitable, to draw some new design, rather than to make a copy of the one printed in the book. Let the new design, however, be an application of the circle. Here are a few suggestions. See chapter on *Decorative Drawing.*



Pages 8, 9, 10, 11. — These pages suggest a series of very easy lessons. The forms to be studied are the hemisphere, sphere, and ellipsoid.

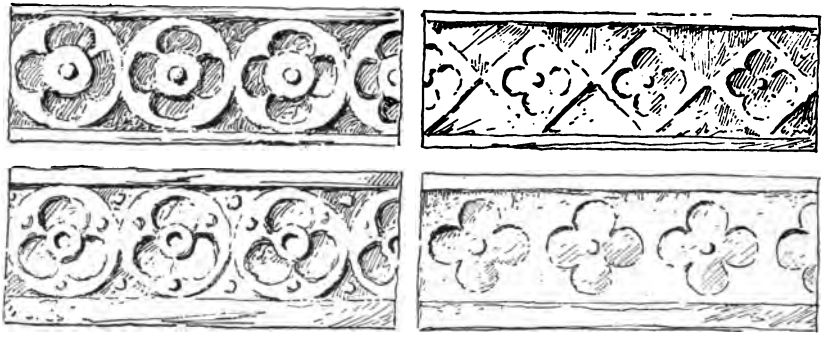
Do not forget to connect each lesson with previous work. Review continually. Something is wrong if the children in this grade are not quite sure of the meaning of the terms horizontal, vertical, and oblique. Review, by the aid of a picture sketched on the blackboard or from objects, the terms surface, face, edge, corner, etc., not forgetting the names of all the plane figures and solids that have been studied from the beginning.

Page 13. — This page is simply an extension of the work suggested on page 9 of Book 2. Re-read carefully the instruction given for that page.

Page 14. — A new name is introduced here, the Plinth. The solid which the name represents is hardly a new one. The picture of the one printed on page 14 looks like a short, thin cylinder. Well, it is a cylinder. To make a plinth easily, cut a slice from either a cylinder or a prism. A technical definition might be: a plinth is a cylinder or prism whose axis is its least dimension. It is *circular*, *square*, *triangular*, *hexagonal*, etc., according as it has circles, squares, triangles, hexagons, etc., for bases.

Give the subject on page 14 in the same way as on previous page.

Page 15. — This page may be used for further practice on cylindrical objects, or for drawing from nature.



Pages 16, 17. — These furnish a continuation of the subject of decoration, using squares, circles, and semicircles as the basis of the ornament. Explain the words alternation, quatrefoil, and trefoil.

Here are some other examples of borders, the designs of which are based on the same figures. Probably the work will be more interesting and profitable if the young people draw from new designs, rather than copy those printed in the book.

Do not forget what is said about the use of the rule or scale under *General Remarks*. See chapter on *Decorative Drawing*.

Page 18. — It may be impossible to have the pupils secure some leaf or spray of general elliptical form, as suggested in the foot-notes on this page; if so, make the lesson a simple one of drawing from nature.

Page 19. — The work on page 19 may be taught like that on page 16.

Page 20. — If the blank drawing book has been used continually in teaching the previous lessons, as intended, it is probably fairly well

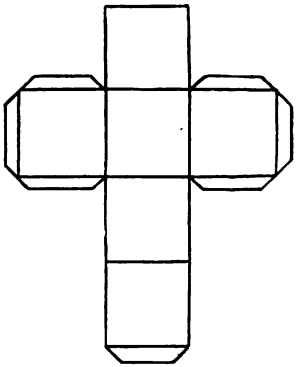
filled by this time; a little space may be left, however, and one page can be devoted to the mounting of the forms cut from paper, as suggested in the foot-notes on page 20 of the drawing book. After a few exercises in the blank book have been given, let pupils complete page 20 as directed; or a row of these forms may be mounted on the page to form a border design.

Page 21. — If possible, have the pupils draw a fresh design on the blank half of this page, rather than copy the printed one.

Pages 22, 23, 24. — The experience gained from previous pages will make it easy to present the subject matter of the remaining pages to the pupils.

BOOK No. 4.

Page 1. — In Book 4 will be found a double leaf of manilla paper. Have the pupils carefully tear this double leaf on the fold. Collect the leaves on which the cylinder is pictured, also the double leaf of historic ornament illustrations, and put them away for use when pages 13 and 15 of the drawing book are reached. On the remaining manilla leaf let the pupils draw the pattern of the cube as directed, cutting it out, folding it, and fastening the edges together.



If gummed paper cannot be secured to fasten the edges together as suggested, laps will have to be added to the pattern, as in this illustration, and strong mucilage or liquid glue will have to be used.

Draw the pattern of this cube slowly and carefully to secure accurate results. Of course rule all the lines, and rule them as fine as possible.

Now, having made this object, we will try by its aid to discover something new about the art of making pictures of things.

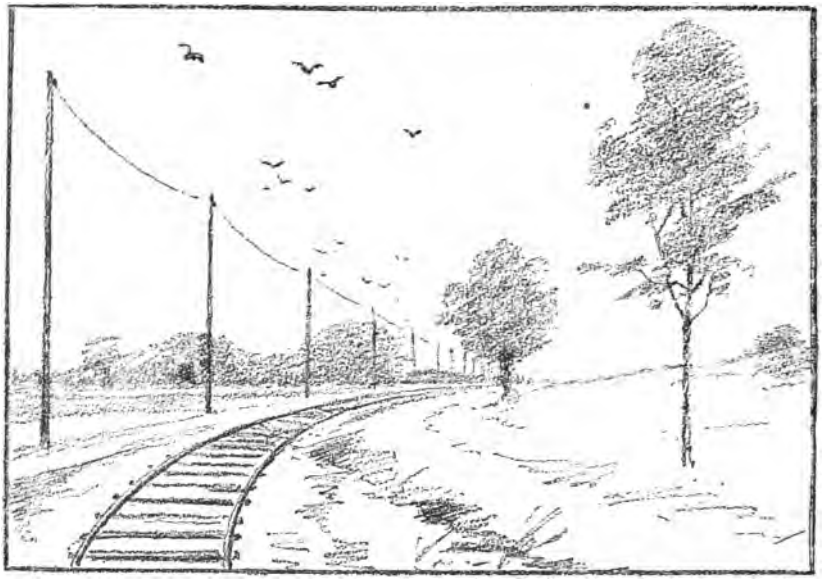
First, collect the drawing books and pass the blank books, in which is to be made the first drawing, which it is hoped will be the beginning of many interesting studies and sketches.

Before the class assembles, draw on the blackboard the landscape pictured on page 42. It is very easy to do. Let it occupy a space of about three by two feet on the board.

Now ask a few questions about the drawing, trying to represent to the pupils the perspective principle; viz., that the farther an object is in

the picture, the smaller it appears. The word perspective should not be mentioned, nor should the rules of perspective be taught, at this point. The following may serve as an illustrative lesson.

"Children, tell me which is the bigger tree; this one (pointing to the one in the foreground), or the one over there in the field?" Some of the class will say, perhaps, that the one in the field is the smaller, and others that it is the larger. Tommy, in one of the back seats, may say, when questioned, "I think if we went to that tree over there to see, it would be much bigger than the one in front." "But see, Tommy," you



reply, "I will measure the height of this tree over in the field" (measuring it with pointer), "and now I will compare its height with the height of the tree in the front part of the picture, and you will see how much taller this front tree is." Perhaps you have staggered Tommy, perhaps not; however, it is safe to say you have not convinced him. If Tommy is bright, he will say in his own way that the tree over in the field *looks* smaller than the front tree, because it is farther away. That is the idea we want to develop.

Call attention to the birds. "Why do the birds, away over there by the distant trees, look like specks against the sky?" Now the children will grasp the idea; and there will be a great shaking of hands, their

owners anxious to answer, and their answers being correct and to the point.

Other questions may be asked. "What about the apparent coming together of the rails of the track? Observe how the sleepers appear to run all together over there; and the telegraph poles, too, are mixed up into one, and how little they seem, while the one in front is so tall."

Now let the children draw the picture in their blank book, you drawing with them; and if the exercise is given step by step, the result will be very satisfactory.

Mabel may ask just how she shall hold and move her pencil, so as to make things look right. Explain to her that it does not matter exactly *how* she does it; what she needs to do is to look carefully at each object till she gets a clear idea of it in her mind, and then she will find that it will not be hard to make a copy of it that will look natural.

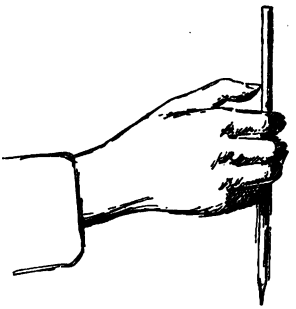
It would be better to draw the framing-line of the picture first; then a light line placing the horizon; next, the rails of the track; next, the distant line of foliage; after that, any of the remaining parts of the picture.

And now perhaps it would be well to teach the young people how to measure the proportionate sizes of objects seen at any distance, or the proportionate sizes of the different parts of any one object.

Sit straight up and well back in the chair. Hold the pencil at arm's length, as illustrated on page 43.

Close one eye (the measurement cannot be taken with both eyes open). Now make the pencil appear to touch the upper end of a vertical line which has been drawn about a foot in length on the board.

Move the thumb up or down on the pencil until the end of the thumb seems to touch the lowest end of the line, still keeping the end of the pencil covering the upper end of the line. With the arm at full length, compare the length of this line with the length of a longer vertical line drawn by the side of the first.



Now place some fairly large objects on the desk, so that they may be seen easily by all the members of the class; it will prove excellent practice for the children to measure their comparative heights and widths. The windows, doors, charts, and pictures about the class-room may be measured in the same way.

Let the pupils employ a ruler as well as a pencil for this work; perhaps the division marks on the ruler will assist them.

Impress on the pupils' minds the necessity, when determining the proportion of objects in this manner, of always holding the pencil, rule, or whatever is used for measuring, *at right angles with the direction in which the object is seen*, that they must never let it point forward or backward.

Another point is to create the habit on the part of the children of holding the measuring arm out at full length. Measuring taken with the arm bent at the elbow is entirely unsatisfactory.

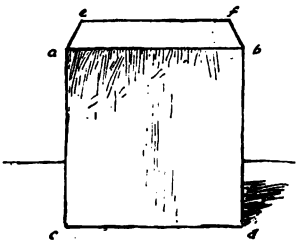
Remember that the measuring of objects in this way gives *proportion* only, not *size*, and that the proportions so found are only approximately true. After all, the eye and brain must do the measuring when picturing the appearance of objects. Measurements taken with the pencil may *suggest* the truth, but nothing more.

There is danger to the young student who begins his drawing by measuring every step of the work, that he will never be able to draw otherwise, and that his work will always have a mechanical appearance

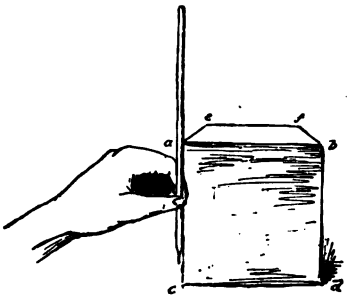
and suggest no feeling; in other words, that it will lack all artistic qualities.

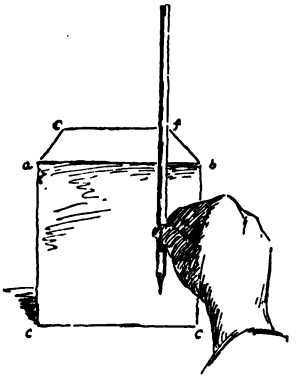
Now draw on the blackboard three pictures of a cube, like illustration here, large enough to be seen clearly by the children in the back seats.

Three drawings are necessary, one in front of each two rows of desks; these need not be all of one size. The reason for employing three drawings is that, unless one sits directly in front of the drawing to be copied, he will get a distorted view of it; and it is only fair that enough drawings be put on the board to give an equal advantage to all pupils.



Now you and the class can "make believe" that the drawings on the board are real cubes. It is an excellent plan to draw from pictures of the objects on the blackboard, when first beginning to study, and to consider these pictures as real objects, drawing from them step by step, as is done when drawing from the objects themselves. First have the class draw the face, *a b c d*. Then determine how far edge *e*—*f* is above edge *a*—*b*, and draw the line *e*—*f*, not minding if it be drawn a little longer than necessary, the object being to picture the line in its right place. It is enough to do one thing at a time. Now hold the





pencil vertical (see illustration), and determine how far to the right of point *a* point *e* is, and how far to the left of point *b* point *f* is. Complete the drawing.

Now do the very same thing from the object. Place the paper cube made on the desk, as far in front of the pupil as possible, so that only

its front and top faces will be visible. If it is desirable that this model be more on a level with the eye than when it is resting on the desk, put under the cube a book placed on its end. Draw this cube as the picture of the cube was drawn.

Another illustration, which will give them a better understanding of the subject, is made by each pupil taking a large piece of manilla paper, and marking out two squares as in the accompanying diagram, Fig. 1.

The squares may be made three inches on a side, or more if necessary.

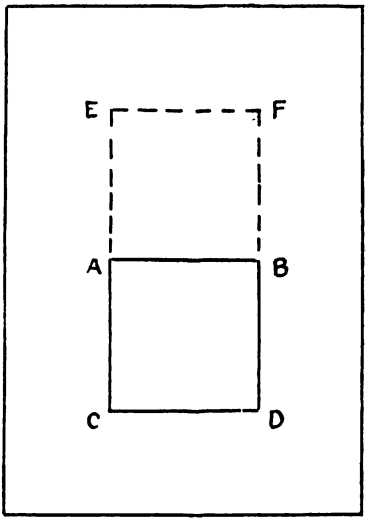


Fig. 1.

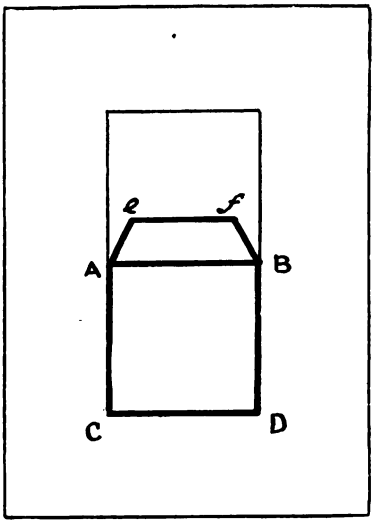


Fig. 2.

A B C D shows the actual shape of the front face of a cube. A B E F shows the actual shape of the top face of the same cube.

Let the class cut on the dotted lines, through three sides of the upper square; then fold the top square back on A B, so that it will stand at right angles to the front face; that is, so that when the front face is in a vertical plane, the top face will be in a horizontal plane. It will now look like Fig. 2, if held directly in front of the eye, on a level with the opening at the top.

The square A B C D now represents the front face, and the square A B E F represents the opening or actual shape of the top face, while A B *e f* shows the top face as it appears when folded back to represent the top face of a cube as it would appear if the cube stood in front of you. Observe that the top face appears different from its actual shape in two

particulars; viz., *e*—*f* is shorter than E—F, its actual length. The lines A—*e* and B—*f* now appear to slant instead of being vertical, and if continued would meet as shown in Fig. 3.

The line A—*e* also is shorter in appearance now than the line A—E, its actual length. It is in reality as long as A—E, but on account of being seen obliquely it looks shorter. A—*e* becomes, as we say, foreshortened. This is the farther edge. *e*—*f* is not to be drawn so far above A—B as the length of A—E. The distance between these lines will vary as the cube is held at different levels.

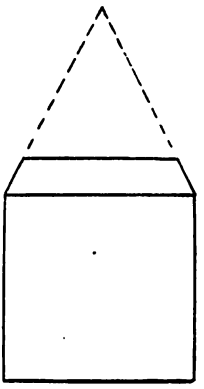
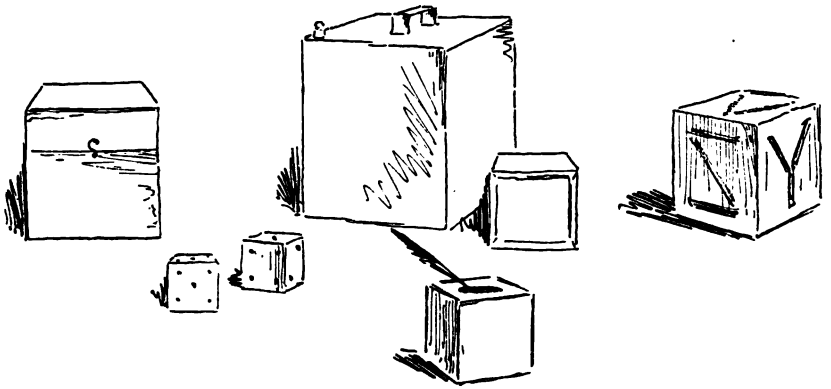


Fig. 3.

It will be well at this stage to have the pupils copy a number of interesting sketches which you have drawn on the board. This will not only make the principles of perspective clearer to them, but will get them into the habit of paying strict attention when the application of these principles is necessary.

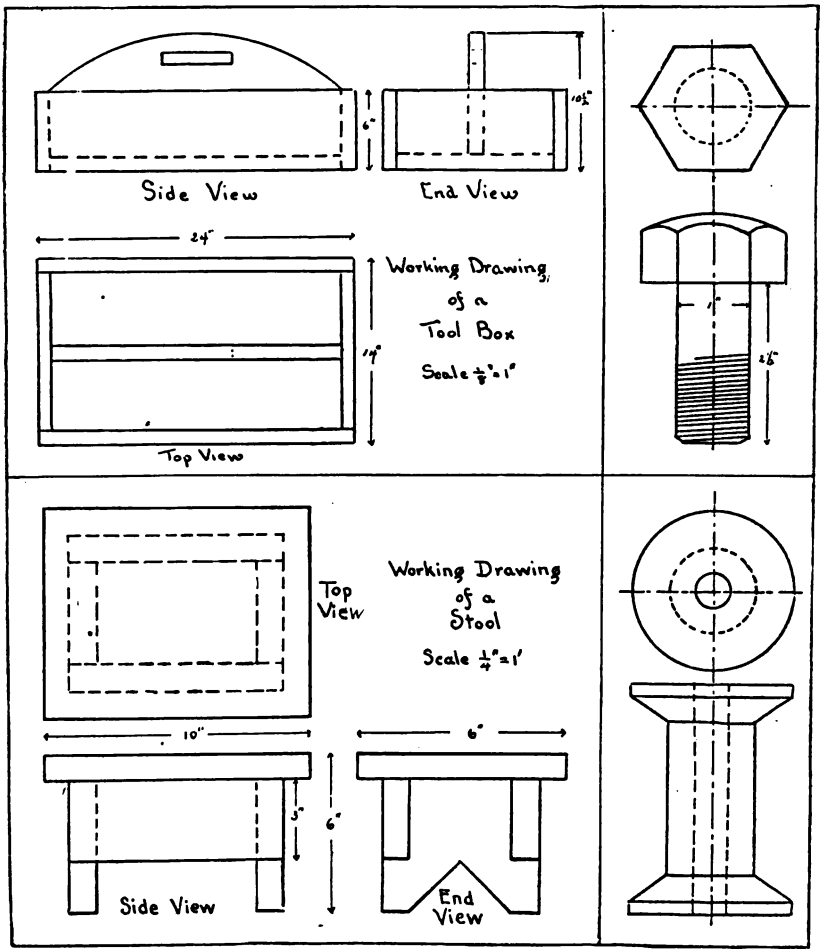
Now, if the drawing books are opened to page 1, the work asked for on the right of the page will be intelligently done. But what about the work called for on the left of the page? There we find two new terms: *Construction* and *Working Drawings*. We know the definition of the former; but what are *working drawings?*

Working Drawings, or Constructive Drawings as they are sometimes



called, are purely conventional representations. They have to do with facts, not appearance. They are useful only to workmen in depicting accurately the form, size, and structure of an object which is to be con-

structed. But could not a perspective drawing be worked from? Yes, if such a drawing pictured a very simple object; but even then there would be danger of confusing appearances with realities.



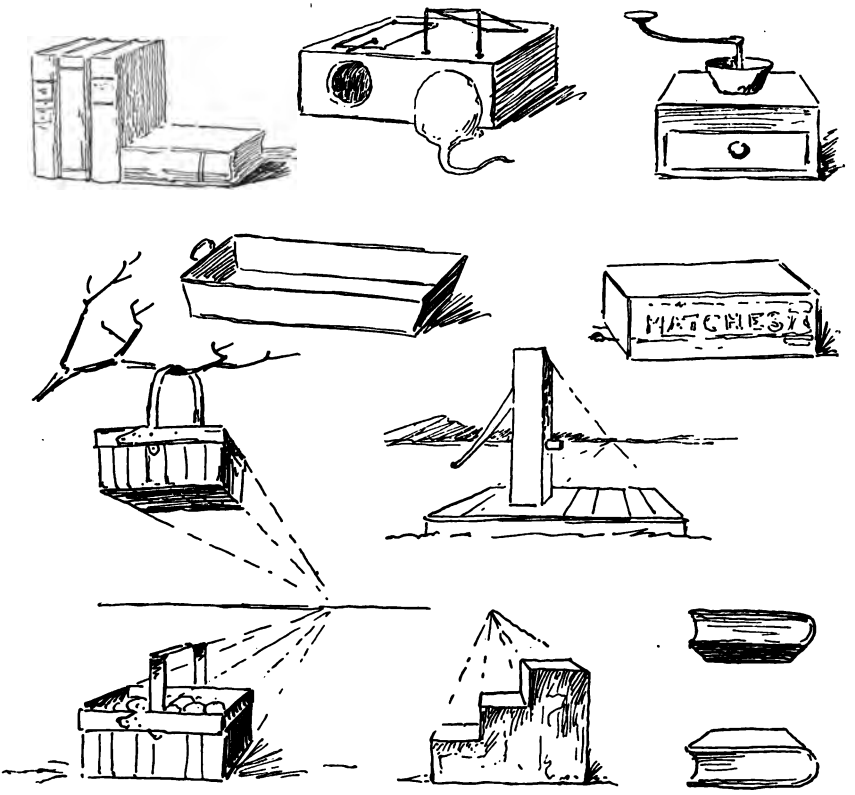
Here is a page of illustrations representing a few working drawings of simple objects.

Complete the working drawing of the cube as directed on page 1 of the drawing book.

Page 2. — The work to be done on page 2 is simply a continuation of that done on page 1. It will be well to make a collection of objects whose forms are cubical, for the children to draw from. (See p. 47.)

Page 3. — Make the square plinth of paper, and give the work suggested on this page in the same way as on page 1.

Page 4. — Following are a few drawings that will assist the teacher when instructing from this page.



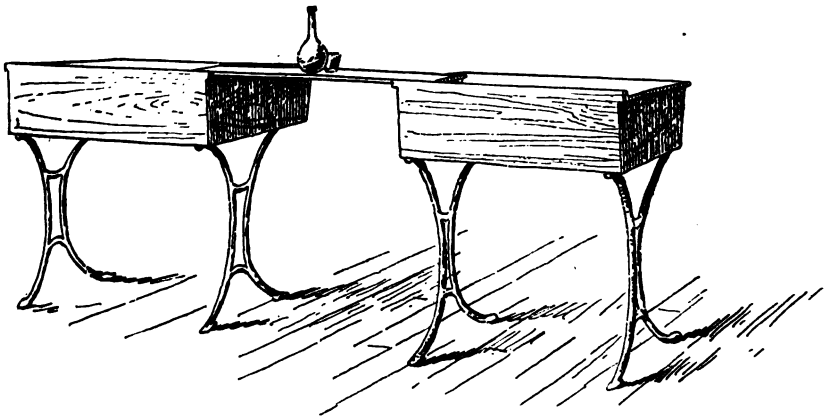
Pages 5, 6, 7, 8, 9. — The work to be done on these pages is a continuation of preceding work. The only suggestions necessary are to go slowly, and make constant use of the blank drawing book.

Page 10. — Do not have the children copy the drawings on this page. Try and secure a collection of simple shells for them to draw from.

Page 11. — It is hardly necessary, after all the drawing that has now

been done, to explain why the circle seen obliquely takes the form of an ellipse. The children see that it does, and that is enough. To make them draw the ellipse as the object presents it, will be a difficult task on the part of the teacher. Not because the children do not see that it is wide or narrow, according to its distance above or below the level of the eye, but because they are careless, or find it easier to draw the same old ellipse whenever they have occasion to picture one. Like the foreshortened face of the cube or cover of the book, its width should be considered with its length.

Notice that the ellipse which pictures the standard of the glass on page 11 is wider in proportion to its size than the ellipse which represents the rim. Why is this?

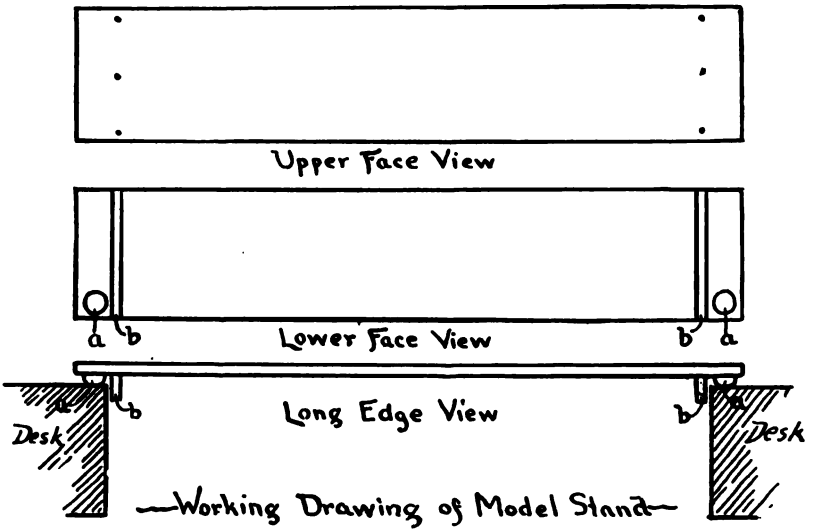


Page 12. — Perhaps it will be found by this time that placing models on the desks to draw from is not very satisfactory. A student should sit at least five feet from the object he attempts to picture. How can we manage to give all the pupils that advantage? Easily. Place boards that will rest on the top of the desks across every alternate aisle, two boards to an aisle, the second board placed half way up the aisle. In a room containing six rows of desks, six boards would be necessary. Place the objects on these boards, and the problem is solved.

"But not so fast," you say. "Where are the boards coming from? It will be useless to ask our school board for them." That is not necessary. Get the boys to make them. The boys will enjoy the work, and it will be a good lesson for them in manual training. Here is a working drawing of the board, which should be made of one-half inch pine, if possible, so as to be light and easily handled; *a*, *a*, are rubber or cork pieces about one-

half or three-fourths of an inch high, and are placed on the under side of the board, close to the two front corners. These pieces of rubber or cork serve to elevate the front edge of the board, counteracting the slant of the desk. *b*, *b*, are strips of wood nailed on the under side of the board, their distance apart being the distance which the two desks on which the board is to rest are apart.

The pupils sitting at the desk on which these boards are placed should not draw from the objects placed on them, but from the objects placed on the front row of boards; or, for the pupils in the front row



—Working Drawing of Model Stand—

of desks, another object or group of objects should be placed on a chair or table.

No less than seven objects or groups of objects should be placed about a class-room of forty or fifty children. It is not fair to place so few objects about a room that some of the pupils are unable to draw them because unable to see them clearly. By the aid of these boards, the work to be done on page 13 will be easily accomplished.

Page 13. — First construct the cylinder from the manilla sheet. Re-read carefully the instructions given for page 1, and give the subject matter on page 13 in a similar way.

See the illustrations picturing objects whose general form is cylindrical on page 35 of this *Manual*.

Pages 14, 17, 19, 20. — After the experience gained from previous lessons, there should be no difficulty in giving successful instruction on the subject found on these pages.

Page 15. — Certainly a half-dozen very interesting lessons, if not more, can be given on the subject matter on page 15, before drawing on the page is required.

A talk on ancient Egypt, its people, customs, manners, and religion, with pictures drawn on the blackboard illustrating the talk, would very profitably take up the time. In fact, such a talk is necessary. The subject matter on this page cannot be introduced in any other way. Of course, the children should make copies of the drawings on the board, and this part of the exercise will give them excellent practice in rapid sketching.

As a review of this subject, written exercises on Egypt may be asked from the children. Such exercises should not be accepted unless illustrated.

The following books relative to the subject will prove very interesting: —

Egypt, Descriptive, Historical, and Picturesque. By G. M. Ebers.

The Story of Ancient Egypt. By Geo. Rawlinson.

Pharaohs and Fellahs. By Amelia Edwards.

The Age of Fable. By Thomas Bulfinch, edited by E. E. Hale.

Picturesque Palestine, Sinai, and Egypt provides some fine illustrations of Egyptian art.

Page 18. — Draw the border enlarged. Read under *General Remarks* what is said on the use of the rule or scale.

Pages 21, 22. — Read carefully what is said under *General Remarks*, about Drawing from Nature and Blocking-in Lines, and the subject matter on pages 21 and 22 will be readily understood.

Pages 23, 24. — The notes printed on these pages are quite sufficient to explain the nature of the work to be done on them.

BOOK No. 5.

THE subject matter in this book is only a continuation of that in Book 4. Unless the pupils have done the work prescribed in that book, they should not be given Book 5.

Page 1. — Study carefully the instructions given for page 1 of Book 4. Review the subject of working or constructive drawing, making in the blank book a few working drawings of some simple forms. Construct the

square pyramid from the manilla sheet found in the book, and complete page 1 of the drawing book as directed.

Have the young people bring to the class-room objects whose general form is based on the form of the square pyramid, and in the blank book make working drawings of the simplest of these objects, and also represent them pictorially.

Pages 2 and **3.** — Complete these pages, as directed at bottom of each page, first drawing for practice in the blank book.

Page 4. — Suggestions for drawing groups of simple objects based on the cylinder and hemisphere are to be found on this page. Pupils may be required to draw on paper, and on the blackboard, three or four plain cylinders in an upright position, and then asked to modify them slightly to represent some common objects. The hemisphere may be drawn in same manner, after which the two may be grouped. Some directions should be given as to arrangement of objects in grouping.

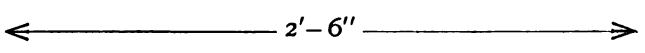
Composition, or arranging of objects in a group, is an important feature in making good drawings. The position of the different objects and their relation to each other, demand some attention. Where two objects are grouped, one of them, usually the shorter, should be placed nearer the foreground, and made to partly conceal a portion of the one in the background. The two should be placed near enough to suggest association, but not, as a rule, side by side, nor one directly in front of the other. In grouping two or more objects, some regard should be paid to the selection of appropriate objects for association. For illustration, the cup and can on this page would make a suitable group, but the milk-can and the inkstand would be somewhat incongruous. A sense of propriety should govern the selection of objects to be grouped for a study.

Objects should be placed so that one of the number will occupy a somewhat prominent position, while the others are accessory. Two long or leading lines in objects which are adjacent, if parallel, will almost invariably prove objectionable. The leading lines of the different objects should make angles with the leading lines of adjacent objects (see p. 12 of this *Manual*). Look also at the group on page 10 of Book 5. You will observe that the main lines of the glass are vertical, the direction of the long diameter of the lemon is about horizontal, while the straw is inclined; the straight lines of the sugar lumps contrast agreeably with the curved lines of the lemon, and of the lower end of the glass, the whole making a pleasing arrangement. See chapter on *Decorative Drawing*, especially the portion referring to illustrations A, B, C, page 18.

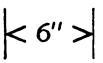
Page 5. — Directions for the work on page 5 are given in the printed notes at the bottom of the page.

Page 6. — The working drawing of the ink-well, found on this page, is not difficult to understand. Draw the centre lines first, then the top view, and the side view last. Add the dimensions. Notice that inches are indicated thus, ″, feet by one mark, thus, ′, so that two feet two inches would be represented in this way, 2′ 2″.

Dimension lines should accompany the figures when necessary, thus: —



or, when distances are so short as to make this line unnecessary, arrow-heads only need be used, thus: —



If possible, always place the dimensions outside, not on the drawing.

Page 7. — Of course, if the objects suggested to be drawn on page 7 cannot be secured, other simple objects will serve the purpose just as well.

Read the instructions for page 12, Book 4.

Pages 8–14. — It is not necessary to give more instructions than are found in the notes printed on these pages.

Page 15. — Read the instructions for page 15, Book 4.

It is not thought necessary to give here a list of books that treat of the history of ancient Greece. The illustrations on page 25 will perhaps help to make the lessons on this subject interesting.

Pages 16–24. — When teaching the work on these pages, do not forget that the printed designs are not to be copied, except on pages 18, 21, and 23; even on those pages, if the designs can be rearranged, the lessons will be more interesting and profitable.

BOOKS Nos. 6, 7.

UNLESS the young people have been through Book 4, give them the subject matter found on the first page of that book as suggested in the *Manual*.

Read carefully all the instructions given for Book 4, and also what is said under *General Remarks*.

It will be remembered that the object taken up for study on page 1 of Book 4 was the cube, and the appearance of this form was drawn with the object placed a little below the eye, and with one of its faces

directly in front. The receding lines of the cube in that drawing appeared to converge to a point directly over and behind the object.

On page 1 of Books 6 and 7, notice that the drawings represent the same object, turned so that the part of it nearest the spectator is one

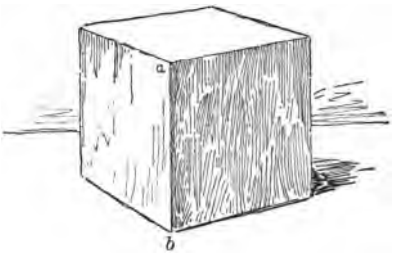


Fig. 1.

of the vertical edges; and that all the horizontal edges appear to converge either to the left or right.

When making a sketch of the cube from the object placed at an angle, the first step is to draw on the paper the nearest vertical edge or line (a—b) of the object. (See Fig. 1.)

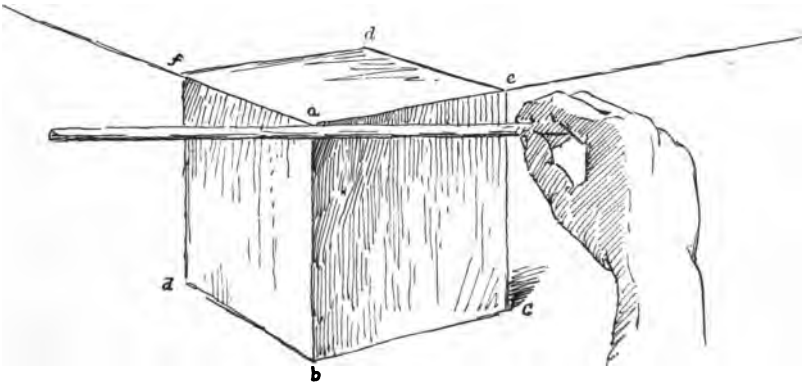


Fig. 2.

Now hold the pencil or ruler in a horizontal position, so that it will appear to touch the object at point a or b. (See Fig. 2.) The angles which the receding lines, a—e, and a—f, or b—c and b—d, make with the pencil or ruler, are readily seen.

Then, as the next step, draw on the paper, the lines $a-e$ and $a-f$, (see Fig. 3), so that they will make the same angle with a horizontal line as that which they make when the pencil or ruler is held in the horizontal position above mentioned. The most difficult part of the exercise is now accomplished.

If the lines $a-e$ and $a-f$ have been drawn (and it would be better to draw them of indefinite length), the lines $b-c$ and $b-d$ can then be drawn.

How much all these lines should converge cannot be exactly stated. Let them come together very gradually, drawing very lightly, remembering what is said about drawing and "blocking-in" under *General Remarks.*

To prove that these lines must be drawn approaching each other slightly, hold the pencil or ruler in a horizontal position against points

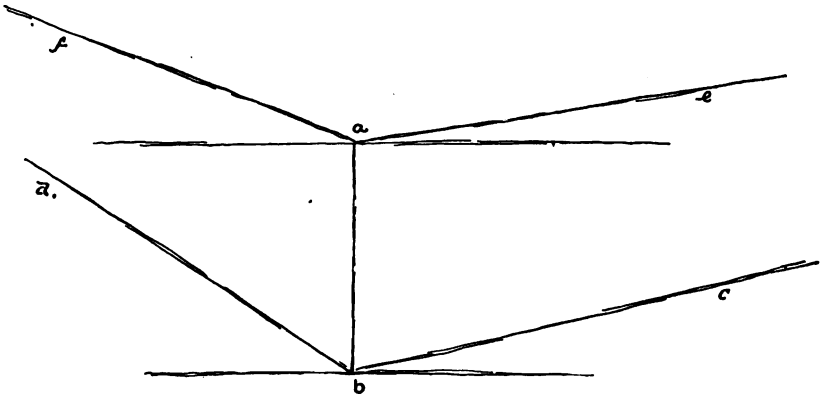


Fig. 3.

a and b of the object. The lower angles are larger than the upper ones. We can now measure the object with the pencil, and find the distance which point c is to the right, and point d to the left.

By comparison of the distance thus obtained, with the length of the line $a-b$ it will be seen that the apparent width of the two vertical faces is less than their actual width, because $a-b$ is the actual length of every line of the cube.

After placing points c and d, it will be a very simple thing to complete the drawing.

From this time on, the remainder of the work to be done in Books 6 and 7 is wholly along the line of work already completed, and it is simply a matter of careful study to accomplish the desired results.

BOOKS Nos. 8, 9.

THERE is no novel principle introduced into these books, nor is there any need of further elementary instruction. The foundation has been laid, provided the pupils have carefully followed the previous drawing books.

It will be noticed that the examples now given are somewhat more complex in form, and more difficult to draw; but if the pupils wish to advance in this higher grade, it is simply a matter of careful observation and painstaking execution.

The term "foreshortening" (example given in Book 8, page 5) here appears for the first time. It means the apparent narrowing or shortening of distances between a near and a distant point in any object drawn, whether it be a single surface or a part of a landscape.

Notice the effect of this principle on either Figs. 1, 2, or 3, Book 8, page 5. You will notice the foreshortening in the drawing of the top of the trough and the top of the pail. We cannot draw any object as it appears without employing this method. Book 9, page 23, has the drawing of a landscape which fully illustrates the idea. You will see the small distance on the paper between the pump and the horizon, while really a space of several miles is represented.

In drawing from nature, fruit and flowers, for example, no previous books have attempted to present more than single leaves or simple sprigs. In Book 8, on page 9, however, is given a cluster of pears; on page 14, a spray of laurel; page 18, the strawberry; page 21, a plum-branch; and in Book 9, a dandelion, and an arrangement of grapes and apples. These seem to make the work harder, while, in fact, to a pupil who has constantly followed the rules, it will be quite as easy to draw these as the earlier examples.